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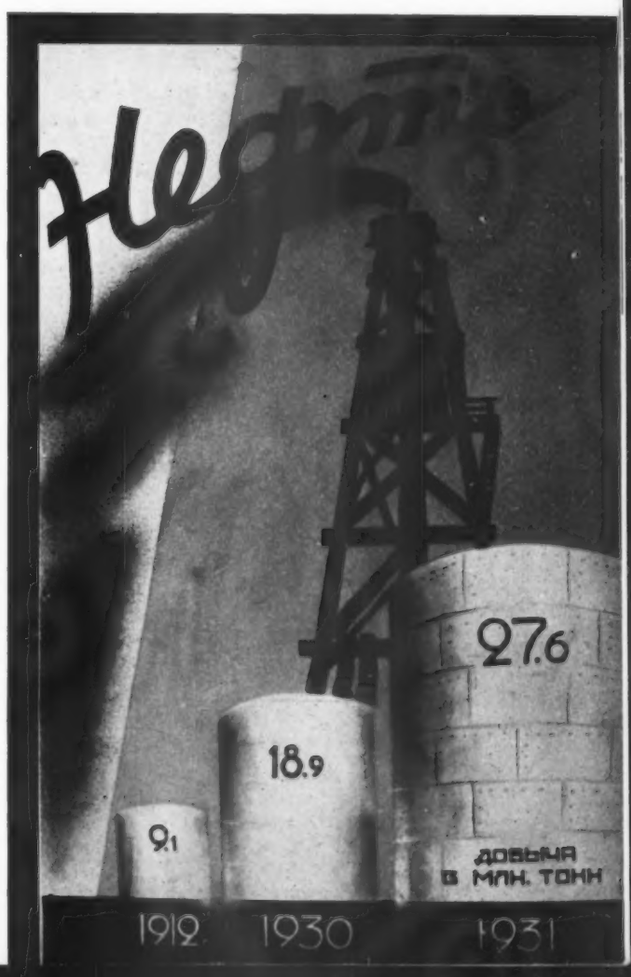
NEW YORK • # WORLD PETROLEUM • LONDON

Special Russian Number Reviewing Soviet Petroleum Industry—Production, Refining, Domestic and Export Sales Policy.

Crude Petroleum Price Advance in United States • Plant Reconstruction Increases Anti-knock Gasoline Output.



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1932

WORLD PETROLEUM

(Incorporating "Petroleum Equipment Exporter")

VOLUME III — EDITOR, E. W. MAYO — NUMBER 5

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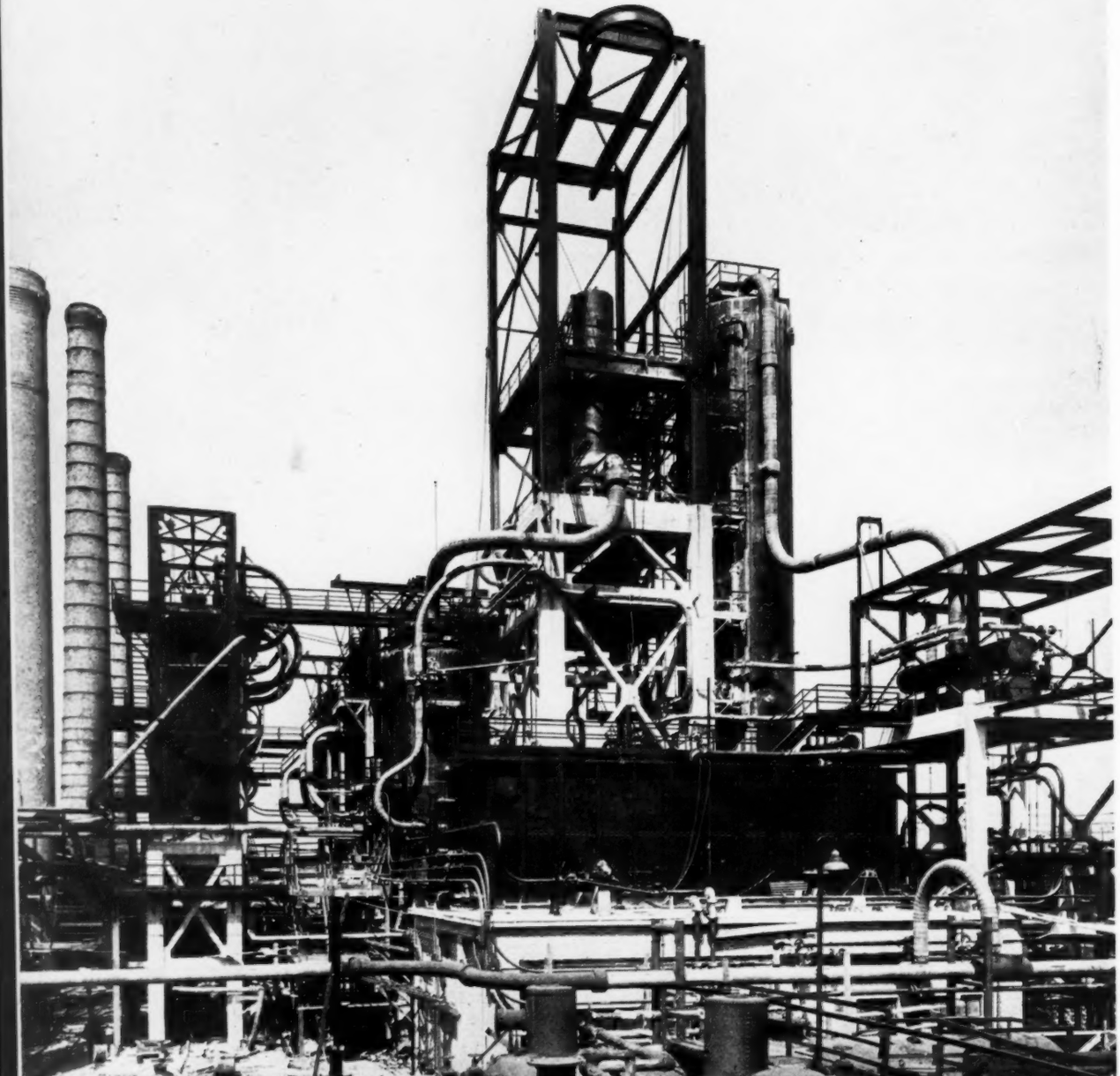

General View of Lummus Installation at Tide Water Bayonne Plant.

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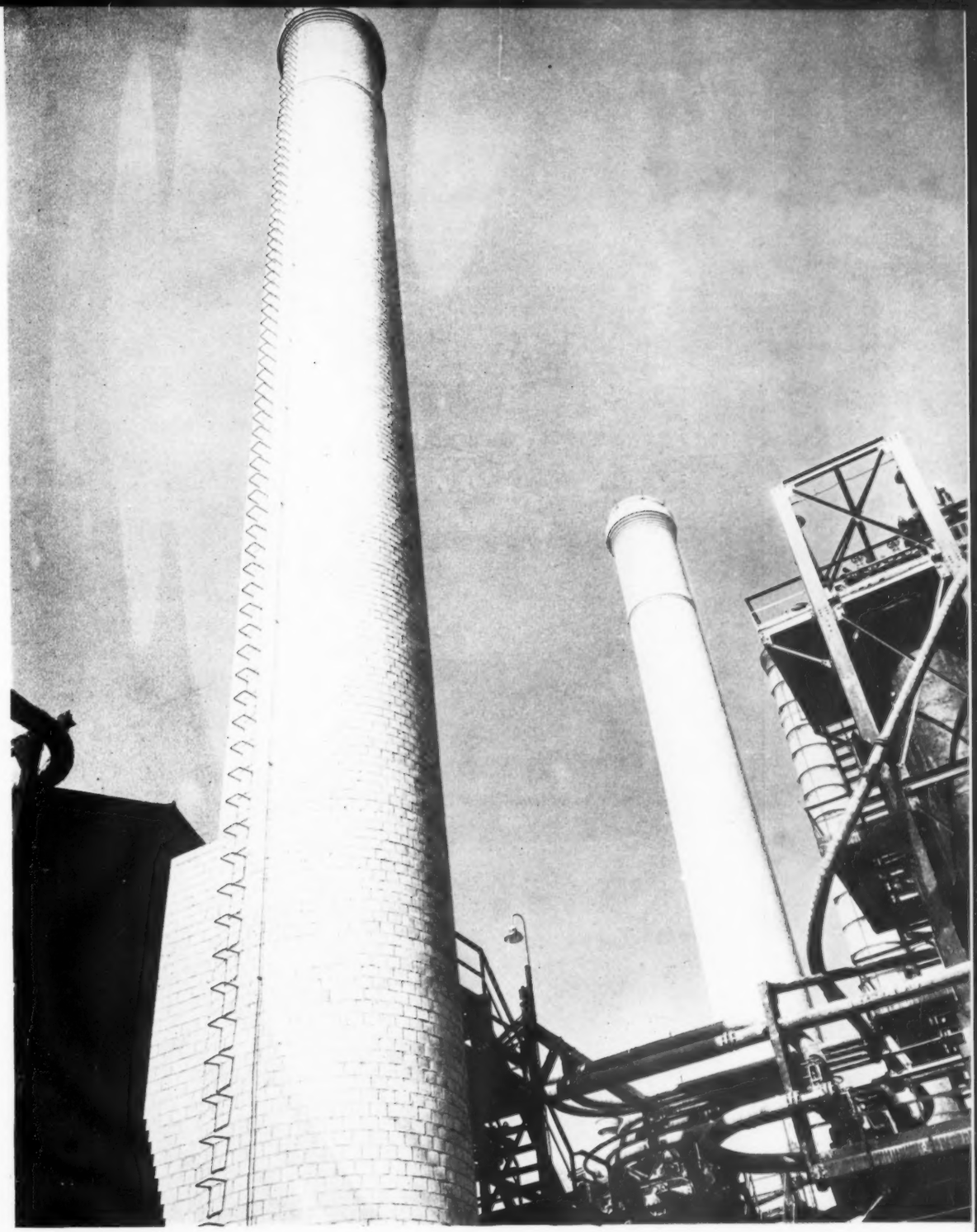

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PETROLEUM

Soviet Oil and International Trade

IN this issue WORLD PETROLEUM presents the first complete, and at the same time almost the only unbiased, survey ever made of the Russian petroleum industry. The timeliness of our action in presenting the information now will be generally recognized in view of the fact that the possibility of establishing more stable conditions in the international oil trade hinges largely upon a definite understanding between the Soviet authorities and other international interests. Consequently a clear appreciation of Russian resources, developments and plans is of direct interest to every member of the petroleum industry. Chairman Riabovol of Soyouznefteexport recently gave notice through our columns of the readiness of Russian authorities to confer on the international situation. This has been followed by action to bring those most concerned together. It may confidently be stated that the possibilities of this subject are soon to be explored.

Credit must be given the Russians for enthusiasm and skill in rehabilitating the neglected ruins of the petroleum industry which they inherited. The increase in Russian production from 60,000,000 bbl. in 1926 to 156,000,000 bbl. in 1931 is an achievement which the capitalistic countries can admire while deploring its consequences. Only blind champions of Soviet perfection will deny that a large measure of the chaos existing in the international petroleum industry today is due to Russian oil. Enthusiasm for the piatiletka (five year plan) and the ease with which oil could be turned into cash led the Soviets to develop their industry with a total disregard of the world oil position. The evil results of this misdirected energy have been aggravated by unskillful marketing in the hands of inexperienced men who have thrown increasing quantities of petroleum products on markets beyond the point of their total saturation. A striking case is the present demoralization of the British market. Among other serious errors of judgment may be mentioned the maladroit invasion of territories supplied by their own best customers.

It now remains to be seen whether this situation can be remedied. The Russian oil purchasing contracts in Great Britain have expired and the willingness of capitalist oil companies to make new ones depends upon the moderation of Soviet demands and the sincerity with which the Russians cooperate in restoring shattered markets.

Russian production has long since passed the point of diminishing financial returns. Efficiency of Russian drilling is handicapped by inability to finance the purchase of modern American equipment and the quality of Russian petroleum products is inferior because of the lack of sufficient modern refining equipment. The inability to convert paper pounds to gold dollars at par has proved a severe blow.

We hold no brief for the Soviet experiment but we do believe that the proper attitude today towards Russia should be one of realism. Russia has great oil resources and the capacity for their exploitation. Condemning the Russians will not exhaust Russian oil fields or improve world markets. If both sides are prepared to come to a fair understanding and carry it out faithfully the tidal wave of Russian oil can be brought under control and at the same time harnessed with tangible benefit to the Russian people.

▼

The Price Increase

CRITICS of the oil industry who believe that prices rise and fall by concerted action among the majors might do well to study the chronology of the recent advances in the Mid-continent and Gulf Coast fields. It reveals a striking lack of unanimity of opinion and shows clearly how competition forces all factors to adjust to price movements even when better judgments counsel against it.

There is little doubt that the advance was premature and if it succeeds this will be due to good luck rather than prevision. Pending tariff legislation has led to the abandonment of the voluntary agreement under which imports were being curtailed. Contracts made before tariff legislation was introduced must be filled at the prices then prevailing and so stocks are being hastily transferred to this country. Imports for the quarter will probably establish a record. The situation in California has its weak spots and if the Sharkey bill fails of passage may get definitely out of hand. Consumption is running well behind last year and the forthcoming survey of the Federal Oil Conservation Board committee on consumption may prove a rude shock to the industry. Coming so early in the season the advance may prove a stimulus to fresh production sufficient to bring about a

collapse of the price structure in time to destroy the possibility of good earnings during the vital summer consumption season.

On the other hand the very gravity of the situation may keep everyone in line. The prospect of another year of record losses like the last one should be sufficient to deter all but the irresponsible from rocking the boat. The international situation, which few people in America think very much about, shows some signs of clearing up. There have been important constructive developments since the price advance was made and the future may yield more evidence of other forward steps. The passage of the Sharkey bill and the adoption of the Interstate Compact would further strengthen the situation.

Of the price rise this much can be said. It is a long shot against odds but if it succeeds its benefits will of course have extended over a longer period than if action had prudently been delayed.

Some of the statements made at the time may be worth remembering: W. S. Farish, president of the Humble Oil and Refining Company said:

> The company's delay in meeting the new prices resulted from a sincere and deliberate conviction that current economic conditions do not warrant an increase in prices, and the decision finally to meet the advance is due in part to numerous urgent appeals from individuals, oil producers, trade organizations, newspapers and State officials, and in part to its desire not to penalize the producers who sell to it and who probably could find no other market.
>
> This company desires higher prices for crude oil just as much as any producer does, but it is convinced that higher prices can prevail only if they rest on a firm economic foundation. Present product prices do not justify purchasers in paying more for crude. This price advance was admittedly based on the hope that better product prices and improved economic conditions generally will follow.
>
> Over the period of five months since the last price advance in November 1931, this company has been unable to secure for its products from its refineries, and from the operation of its transportation systems to its refineries, a profit on the crude bought, transported, and refined. At the present time it is buying more oil than it wants, and it has endeavored persistently during recent weeks to reduce its takings; but it has been unable to do so without working a hardship on the producers whom it serves.
>
> Producers cannot hope to command a higher price for crude oil as long as the amount they offer for sale is greater than purchasers are willing to buy. Balancing supply with demand is imperative if the new price schedule is to be maintained. Responsibility for securing this balance rests squarely upon those who have initiated and sponsored this price advance, including the producers, trade organizations, newspapers and officials.

In reply to a telegram from Thurman Hill of the Kansas Public Service Commission urging that the advance be met the directors of the Standard Oil Company (Indiana) observed:

> The price of crude oil must always be determined by the prices the products will bring. The present realization on products does not warrant the present crude oil prices, let alone an advance. The chaos existing in the market prices of gasoline and other products is nowhere more pronounced than in Kansas. Dumping of distress gasoline, evasion of gasoline taxes and countless other unsound practices have forced prices far below normal, and have eliminated the possibility of realization justifying the price of crude.
>
> If the new crude prices are to be maintained, it must be by a general increase in prices for finished products. We assume that in demanding an increase in the crude price you are willing to assume the responsibility of causing advanced prices of gasoline and other finished products to the farmers and other consumers in Kansas and elsewhere at a time when the commodity price trend is downward and general conditions are demoralized.
>
> The Standard directors said they would advance their price for crude "notwithstanding the lack of a sound basis" and because of "the importunities of business and civic organizations and producers who we know have used every possible effort to stabilize production."
>
> "The hopes advanced that this action will aid in stabilizing conditions may be realized," the telegram concluded, "although the results of similar temporary expedients in recent months do not encourage the belief. Unless such hopes are realized, it is obvious that the price will not hold."

Commenting on the same matter our British correspondent writes:

> It may have been mere coincidence that the subsidiary of the Royal Dutch-Shell group was the last among the big Mid-continent companies to come in on the recent advance of 15 cents per barrel in crude. The tardiness with which this company joined in the upward movement typifies, nevertheless, the feeling in many British quarters regarding a rise in crude oil prices at the present time. The oil situation in the United States is being watched very keenly, and hopes have recently been engendered by the success of restriction measures. Two possible dangers foreseen in a rise in prices, however, are a stimulation of drilling and a general optimism regarding oil affairs which may prove to be unjustified. On a short view, an advance in crude and petroleum products may improve share market sentiment, but many oil men in London consider that the situation in America, particularly on the consumption side, does not appear to warrant an advance. Despite expressions of this and similar opinions, it is, of course fully realized that the American oil industry can run its own affairs with considerable shrewdness, and that the people on the spot are best able to weigh up the position.

▼

Russian pipeline economically using railroad right of way

Russian Oil Heads Visit New York

Possibilities of an International Oil Agreement to be Examined in Immediate Future. Successful Outcome Dependent on Reasonableness of Russian Demands. ***By Russell Palmer***

SINCE March 4 when Konstentin Riabovol, Chairman of Soyouznefteexport central agency for the sale of Russian oil abroad, cabled the Editor of WORLD PETROLEUM declaring they were willing to "discuss means of regulating the world's oil output and to work out joint measures due to be taken," all indications have pointed to early action looking to this end.

Because of the delicate nature of the negotiations WORLD PETROLEUM, while fully informed has heretofore refrained from discussing the matter in print. Failure of those concerned to issue any official statement in the matter, a course strongly urged by this journal, has led naturally to considerable speculation by the press as to what was taking place. When it became known on both sides of the Atlantic that leading Soviet oil officials and important company representatives were visiting New York a number of broad deductions were drawn by the daily press.

The publicity thus given the matter, while wide, was only partly correct. It accordingly seems advisable at this time to state such facts as can be definitely established, in order that the petroleum industry may be advised as to what has been done, what the possibilities of the situation are, and what prospects there are for a possible improvement in the international market.

The lack of any official statement about the matter shows that those directly concerned did not give this phase of the subject adequate consideration and it also indicates the lack of 100 percent agreement about what is to be done. WORLD PETROLEUM has for some time pointed out that an understanding with the Russians was essential to the restoring of prices outside the United States. The taking over by Jersey Standard of the Pan American foreign properties undoubtedly clears the way for such an understanding; but the press reports that such an arrangement will now be concluded are premature. Phillip Rabinovich, member of the Russian Commissariat of Foreign Trade, K. Riabovol, Chairman of Soyouznefteexport and R. N. Fridman, Vice Chairman of Russian Oil Products, Ltd., arrived in New York on the SS BREMEN, May third. While they advised the ship's news reporters that they did not know why they had come, the thrifty Soviet Government is not given to excursions. The fact is that they came at the suggestion of C. E. Arnott, President of Socony-Vacuum. It may be assumed that they were invited because Mr. Arnott believed that there was a possibility of arriving at a reasonable agreement on the Russian problem but this still remains to be demonstrated. The Russians stated on arrival that they had not formulated any proposal but they will be asked at preliminary meetings to do so. There will be a general meeting about the twelfth of May of a number of the leading men in the international oil industry. This will include among others Robert Irving Watson, Managing Director of the Burmah Oil Company, Ltd., and Director of the Anglo-Persian Oil Company, Ltd., and Shell Transport and Trading; William Frazer, C. B. E., Deputy-Chairman of the Anglo-Persian Oil Company, Ltd., and Director of the Iraq Petroleum Company and J. B. Aug. Kessler, Joint Managing Director of the Royal Dutch. It is understood that the principal American companies trading abroad such as Texas, Sinclair, etc., will be represented.

These gentlemen will discuss a number of common problems in the world oil business including foremost that created by Russian exports and also the limitation of production in fields outside the United States, and the difficulties created by the emergency exchange requirements now being enforced in various countries.

If it can be demonstrated to the satisfaction of all concerned that the Russians are here for business and not for politics and there appears to be a prospect that the problems of the two groups have a common and practical meeting basis there will be a world oil conference. Otherwise there will be no conference.

The real point at issue is whether there will be a conference. This will be decided after the arrival of the Europeans and will depend upon the success of Mr. Arnott's negotiations with the Russians.

The greatest credit is due Mr. Arnott for his courage in taking the initiative in this important but very vexatious problem. While Mr. Arnott has occupied his present position only a short time, his company, which has been created out of the consolidation of the Standard Oil Company of New York, long an important factor in export business, and the Vacuum Oil Company, is now one of the largest in the business. Although the task which Mr. Arnott has undertaken is a difficult one it is unquestionably of a most constructive nature. That the Standard group is willing to cooperate may be assumed from the fact that the head of one of the largest units in the group has inaugurated this movement, and while it is a well known fact that considerable bitterness has existed between Sir Henri Deterding and the Russians, Sir Henri is a business man and will not allow his personal feelings to come before the interests of his 82,000 stockholders. There is no question that Mr. Kessler desires first and foremost to see conditions in the industry improved. There has been some difference of opinion as to the practical application of his plan in some quarters but the fact remains that he was the first man to state the problem and urge the adoption of definite measures to improve conditions. It seems altogether likely that if any other practical measure proves generally acceptable Mr. Kessler will cooperate in any reasonable way.

If the Russians make the slightest effort to capitalize the situation politically, or if they claim an allotment of markets or quotas which cannot be realized, we predict a failure, but if they approach the subject from a commercial and economic viewpoint in a reasonable frame of mind there is some hope of alleviating matters.

It is to be sincerely hoped that those in charge will adopt the only proper course, the issuance of frank periodic statements to the public and the industry.

Attention is called to the many valuable articles in this issue dealing with the Russian problem, particularly the article on Russian finance.

$150,000,000 Purchase Affects World Industry

Sale of Pan American Foreign Properties Strengthens Position of Both Companies, Simplifies British Situation and Emphasizes Jersey's Financial Strength.

THE impending acquisition of the foreign properties of the Pan American Petroleum and Transport Company by the Standard Oil Company of New Jersey may rightly be termed the most constructive step taken in the international petroleum industry during recent years.

President Seubert of the Standard Oil Company (Indiana) which controls Pan American is to be strongly commended for his sensible course in withdrawing under favorable circumstances from direct participation in the complex and far-flung foreign field, particularly in view of the fresh complications likely to be caused by a petroleum tariff in the United States.

The original project involving the development of the Venezuelan properties and the building of the Aruba refinery was undoubtedly a sound plan and well conceived in view of the conditions which prevailed at that time in the United States. There is little doubt that the unusual efficiency of the Aruba refinery would make it possible to continue importing white products into the United States in the face of a heavy tariff. However, the fact that the natural interests of the Indiana company are in the interior of the United States suggests that it may be desirable for the company in any event to turn to fresh domestic sources of supply. Just how the company will replace its imports in taking care of its domestic distribution is not indicated but an arrangement to purchase American crude (and perhaps some refined products) from Humble Oil and Refining, subsidiary of Jersey Standard, would appear logical.

Derop. Soviet competitor of Nitag in Germany.

In spite of the vigorous campaign for a tariff it seems possible that this fresh imposition in a tariff-tried world could have been avoided by adequate presentation of the arguments against it. The neutrality of the Jersey Standard on the issue, the unwillingness of the Shell Company to involve itself in a controversial domestic issue and the delicate position of the Mellon-Gulf interests left the work of opposing the tariff to the Pan American.

Since the tariff fight has led to this interesting realignment of forces in the foreign field it may be remarked in passing that while a tariff seems assured it is by no means certain that it will bring one iota of benefit to the Mid-continent operators who made the fight and financed it. The tariff is unlikely to improve domestic prices anywhere. Lowered imports will be offset by reduced exports and if there is any substitution of domestic for foreign supplies these will be drawn from California and Texas and not from the Mid-continent.

The successful consummation of the Jersey-Pan American deal will definitely confirm Walter C. Teagle in his position as an outstanding leader of the world petroleum industry. When better times come again we hope there will be those who will remember that in one of the industry's darkest moments Mr. Teagle had the vision and courage to make an investment of over one hundred million dollars and take on greatly increased responsibilities. The ability of Jersey Standard to make a deal of this magnitude in these times is striking tribute to the soundness of the original Rockefeller policy of being always prepared financially.

The strongly constructive character of the anticipated arrangement has not been generally appreciated in the United States. Threatened by a tariff Pan American has been compelled to seek a foreign market for its products. The invasion of the British market, already disturbed by Russian marketing operations resulted in its complete demoralization. With Pan American under the Standard Oil banner pressure on the British market from one source is eliminated. This reduces the principal factors to the Anglo-Persian-Shell organization, Standard oil interests and the Russians. If a deal with the Russians can now be made, as seems likely, it is possible that British motorists will not be able to buy their petrol below cost very much longer.

Beyond Mr. Seubert's statement that an agreement has been reached in principle and the details are to be worked out, very little definite information has been made public at this time. It is understood that Standard of Indiana will have substantial interest in the Jersey company through stockholding. Proposed payment in the form of cash and stock is estimated at about $150,000,000 of which approximately $50,000,000 will be cash already available in the treasury of the Jersey Standard, and the balance will be covered by some 2,500,000 shares of $25 capital stock.

The recent unusual activity in International Petroleum Company stock has led to the hypothesis that the Standard Oil Company of New Jersey may be planning to handle the transaction through this important subsidiary of the Imperial Oil Company. The Standard has found a very real advantage in carrying on its operations under the British flag because of Britain's more stable foreign policy. It must be borne in mind that the very foreign operations which have been so strongly criticized in connection with the tariff agitation were originally undertaken at the behest of a former administration.

In order to avail itself of these advantages, a second alternative has been

suggested which consists of forming a holding company to control all the foreign properties of the Standard Oil Company of N. J. with the exception of the Imperial Oil Company and International Petroleum Company. At present Pan American expects to proceed with its plan to form a subsidiary to take over all its foreign properties and its tanker fleet. One share of stock in this company will be distributed for each Pan American share held. Ninety-six percent of the shares would go to Indiana Standard.

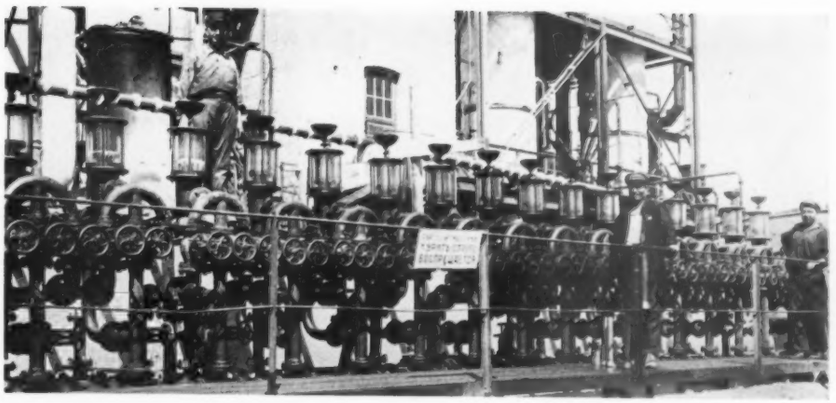
R. G. Stewart, president of the Pan American, will become a director of the Jersey Standard.

Consolidation of Pan American's foreign properties with those of the Jersey Standard will be accomplished with very little difficulty as the latter company has subsidiaries in practically all the locations where these properties are situated. West India Oil Company may take over control of Pan American's refinery at Aruba and its marketing facilities in South America. Pan American producing properties in Venezuela operated by the Lago Oil and Transport Company may be consolidated with Creole Petroleum Company and Standard Oil of Venezuela, while Mexican producing properties would come under the control of the Transcontinental Oil Company. The Pan American tanker fleet will be controlled by the Standard Shipping Company. Pan American's British and European marketing companies may be consolidated with subsidiaries of the Jersey Standard in England and Germany.

Pan American has been steadily expanding its outlets in foreign countries during the past few years by such steps as the purchase of Tide Water's South American business, distribution contracts in Germany and the purchase of marketing facilities in Great Britain. However, this program has not proceeded far enough to take care of the output of the 115,000 bbl. refinery at Aruba, and Pan American's imports to feed its domestic business have continued substantial.

The Jersey company on the other hand has a large foreign business, supplied in part by exports of American oils and the Pan American foreign supply could be easily substituted for a substantial part of these exports.

Properties to be transferred would include not only the Aruba plant and foreign distribution facilities but also substantial crude oil properties in Venezuela and Mexico. Prior to securing control of Pan American, which is now 96 percent owned, Standard Oil (Indiana) had confined its activities to this country and it now appears that a reversion to this policy is imminent.



Look boxes in a Russian refinery; origin of petroleum products that have helped to hasten the crisis in the world market.

Mr. Seubert's official statement on the matter is as follows:

Negotiations are in progress for the sale of the interest of Standard Oil Company of Indiana in Pan American Petroleum and Transport Company's foreign properties and business to the Standard Oil Company of New Jersey. An agreement in principle has been reached, but there remain many details to be worked out before the negotiations can be definitely concluded.

One of the purposes of the negotiations is to protect the interests of our company against the effects of a tariff or excise tax which would make it impossible for Pan American to continue importing into this country the products obtained from its properties in Venezuela and Mexico. There has been a strong trend away from the traditional policy of free importation of oil, and sooner or later it is likely that a prohibitive tariff or tax may be imposed.

If we retained the Pan American foreign properties it would be necessary to go into foreign markets in a big way to obtain outlets to substitute for those lost in the United States. Huge expenditures would be involved and much duplication of existing facilities. In view of the present demoralized condition of foreign markets and of the uncertainty regarding the part Russia is going to play in the world oil trade, it appears that it would be difficult to succeed in such an undertaking, and that it would be much better for these properties to be operated by a company already well established in foreign marketing. We are doing this in such a way that Standard Oil Company of Indiana will have a substantial interest in the operating company through stock holdings. Thus a reorganization of the foreign properties will be accomplished. This will facilitate their operation on a sound economic basis and permit Standard Oil Company of Indiana to participate in the advantages of the realignment.

The outlook for our domestic operations is highly satisfactory. We have greatly increased our source of crude oil in this country so that we no longer feel the same need of the reserves in Mexico and Venezuela for our domestic business that existed when the properties in those countries were acquired.

The Pan American domestic properties are not involved in the negotiations.

A list of the principal foreign properties of the Pan American follows:

Aruba, D.W.I.
—refinery, 115,000 bbl. capacity.

Venezuela
—3,100,000 acres concession near Lake Maracaibo.
—topping plant.
—marine equipment for transportation on Lake Maracaibo, capacity 110,000 bbl. per day.

Mexico
—Tampico refinery, 20,000 bbl. daily capacity.
—storage capacity, 2,000,000 bbl.
—1,500,000 acres owned and leased.
—750 miles, pipeline.
—65 miles of railroad.
—pumping stations, compressor plants and complete equipment.

Great Britian
—Petroleum storage and Finance Corporation distributing and storage facilities sufficient to handle about 10 percent of the British petrol trade.
—Ebano, asphalt ocean terminals in 3 ports.

Germany
—Nitag distributing facilities, warehouses, transportation facilities, etc. Compounding plant at Hamburg.
—Ebano, asphalt plant 5,000 bbl. crude daily, 450,000 bbl. storage capacity, Hamburg.

Tanker fleet
—29 ocean tankers, total deadweight tonnage 268,163 and total capacity 1,750,000 bbl.

In addition to the above mentioned properties, Pan American owns and controls extensive distributing systems in South America and elsewhere.

▼

Comment

EDITOR, WORLD PETROLEUM:

Mr. Paul Dormann has never been associated with me in any business capacity and has nothing to do with any enterprise in connection with forming any new Asphalt Companies, neither Messrs. Nitag of Germany nor their affiliated companies have anything to do with this enterprise.

LONDON D. FILITZ

Industry's Reaction to New Kessler Plan

Some British and Roumanian Views Containing Constructive Criticism of the Modified Plan for Stabilization of the International Petroleum Industry.

M. N. CONSTANTINESCU, Delegate Manager of the Société Creditul Minier of Bucharest, Roumania, whose carefully thought-out comments on the original Kessler plan were published in the January issue of WORLD PETROLEUM submits the following criticism and suggestions relating to the amended Kessler plan. Mr. Constantinescu expresses the highest regard for Mr. Kessler's perseverance in attempting to evolve a suitable plan to overcome the difficulties faced by the international petroleum industry. The necessity of making special provision for the United States where anti-trust laws restrain American oil industrialists from joining an agreement for the restriction of production emphasizes even more strongly the point suggested by Mr. Constantinescu in his previous comments; that an international agreement covering exports would prove more satisfactory than attempting to restrict production in the important petroleum producing countries of the world.

In spite of all the difficulties attending initial discussions we believe that it is easier to obtain the limitation of quantities of petroleum to be exported by each country, under agreement with their respective Governments and guaranteed by these same Governments, than to accept *de plano* as correct, the production as declared by each of the producers.

Distribution of premiums in accordance with the total production of each country rather than of each producer places certain countries in a special position as compared with others.

Thus, for example, Russia can easily declare —in conformity with her Five Year Plan—a production of from 700,000 to 800,000 bbl. per day (around 40,000,000 tons per year), and, as the only producer of petroleum in the country is the Soviet State, it is possible for the latter, while paying for her quota to reduce her production, in such manner that the greater part of the fund advanced by the producers of the other countries will return to her.

In producing countries where the entire production is owned by one company (Persia), or by a restricted number of producers (Dutch East Indies), the same thing could happen, while producers in other countries, though having actually reduced production, may obtain no indemnity, since other producers in the same country might increase their production in a larger measure than the former have reduced theirs. It might even happen that they would be forced to contribute with a fine to their country.

Would it not, therefore, be much simpler to anticipate, through international agreements, excess exports of the producing countries, established after an agreement of all the producers in each country, and with the consent of their respective Governments, under the same conditions suggested for the United States?

We also feel that this procedure would be fair, because it would allow for an increase in production in those countries whose domestic consumption is increasing. This being in part due to the efforts of the respective producers it is only just that these be the first to benefit therefrom.

Mr. Constantinescu next takes up the question of the fund to be raised by the producers in countries participating in the agreement and reviews the unequal obligation placed on financially powerful companies compared with smaller companies in less advantageous circumstances. Although the modified Kessler plan provides for the formation of a Syndicate to furnish the contribution expected from companies which are unable to raise this amount of money from the banks, Mr. Constantinescu feels that this would place the smaller companies in a position of dependence which might prove irksome. This objection would be overcome, however, if the total sum were furnished by the entire petroleum industry in each country and possibly assured by the Government.

Another point covered by this careful review of the Kessler plan is the necessity of eliminating the interruption of the agreement every time the price of petroleum products rose above certain limits. The disadvantage of this periodic interruption would be avoided if the basis of the agreement was the export surplus of the participating countries. Exports would increase with the rise of prices in the world market and decrease with the decline of prices without interrupting the continuance of the agreement.

Mr. Constantinescu concludes:

The serious consideration due a plan contemplating the establishment of a balance between production and consumption, especially when suggested by an executive of one of the most powerful petroleum groups in the world, makes this an especially opportune time to call a conference of producers of the various petroleum exporting countries of the world, in order to establish the initial basis on which a general agreement could be concluded. Once this basis is accepted by the authorized representatives of the petroleum industry, it would be possible to establish means for its realization.

The best thing to do, until the meeting of the representatives for such a conference, would be to provide in advance a statement of the principal points to be treated at the conference. These might include a list of the countries participating, duration of the convention, basis for allotting quotas (limitation of drillings, and production or limitation of exportable surpluses), the criteria for the determination of normal consumption, the means of reducing quantities established to correspond with normal consumption and the necessary guarantees to assure adherence to the agreement.

We trust that, this time, the American Petroleum Institute will be favorably disposed toward the idea of calling a conference as soon as a program of the points for discussion has been agreed upon.

The extreme importance of a rational plan of production and distribution of petroleum furnishes the reason for the gratitude of the Rumanian producers to Mr. Kessler for having put under discussion a question of such importance, a question upon which the future of the petroleum industry throughout the world depends.

THE London representative of WORLD PETROLEUM has availed himself of the past month to discuss with leading British oil executives outstanding features of the modified Kessler plan and presents herewith a summary of the views expressed.

SEEKING considered views on the amended Kessler Oil Stabilization Plan, I have discussed it during the past month with a number of leading men in the petroleum production and distributing industries.

There is no doubt that Mr. Kessler's proposals have a sympathetic public in oil circles here. The talks I have had, however, emphasize the fact that many obstacles have to be surmounted between the inception of such a plan and its effective operation.

It is generally agreed that, for a plan aiming at such wide application, Mr. Kessler's ideas are relatively simple and workable. Absence of preparatory statistical work prior to the publication of the proposals is not regarded as a serious omission. Such work could be done as well after as before the scheme had been approved in principle in the countries which it proposes to cover.

With the actual working out of the plan on the theoretical side there is also little disposition to criticize by those who have studied it in detail. One outstanding drawback, however, is seen in the long-term viewpoint essential for international control of petroleum production.

In one paragraph of his scheme, Mr. Kessler suggests that the United States should undertake not to cancel its participation for a period of five years. It has been emphatically suggested that anything like a five-year outlook in the oil industry, although often obviously necessary in making individual plans, is too long for purposes of international agreements in connection with the scheme. No one, of course, need look back further than the past five years to see how the statistical lay-out and prospects of the petroleum industry have changed both on the production and consumption side.

Discussions of this phase of oil stabilization possibilities inevitably led up to the question of what may be considered "normal" world consumption, in view of the uncertainties of the present times.

Under the Kessler plan, "normal" consumption outside the United States would have to be estimated by a meeting of fully accredited representatives of the participating countries. But, it is asked, would consumption estimates by these representatives prove to be anywhere near the mark? The history of conservation schemes during the past decade, such as Copper Exporters, Inc., wheat pools in various countries, the British rubber restriction scheme, and the International Tin Committee, show quite clearly that forecasts of consumption are apt to be completely falsified by universal economic trends. In the case of all these producers' combines, falling consumption of the commodities concerned has at one time or another thrown the schemes out of balance. Output has been restricted to tally with a given estimated demand, but the latter has let producers down by shrinking before the production cut had time to operate as a market factor. It would conceivably be easier to estimate world consumption of petroleum products than many commodities, but oil men in London are under no delusions as to the difficulties which would have to be faced under this head alone in operating the Kessler plan.

So much for the views on the actual working of the scheme. The initial difficulty, however, as seen in London oil circles, is in negotiating the numerous and involved agreements on which the scheme is based. International arrangements for production control are not new, but the Kessler plan contemplates agreements of wider scope and greater diversity than anything yet attempted.

There is in the first place the general agreement among international groups, and between the individual producers in each country; then the undertaking of an entirely different character relating to United States exports; then the consent to prohibition or taxation of drilling to be obtained from Governments with widely differing economic viewpoints. This list leaves out of account such potentially big producers as Iraq, where control is already poised, through Iraq Petroleum and the B. O. D. Company, between varied international groups.

That this great difficulty of securing the agreements outlined above has to be met right at the outset is considered an advantage rather than the reverse. It gives the assurance that a minimum of time will be wasted if the scheme is not acceptable.

London's reaction to the plan may therefore be summarized as follows:

Advantages of stabilization admitted.
Scheme approved in principle.
Many impediments to execution visualized.

It is the general view, nevertheless, that Mr. Kessler, by giving publicity to a cleverly devised and reasonably simple scheme of international cooperation, has deserved well of the oil industry.

At the worst, he will have thrown light on the impossibility of world action to conserve oil supplies. If, on the other hand, his scheme could be made to work, it would prove an inestimable advantage to the world's oil producers.

In view of the importance attached to Russian adherence to the Kessler plan, I have obtained a statement from a highly placed official of Russian Oil Products, Limited, the central Soviet distributing concern in the British market.

He believes the plan to be a simple and workable one, but emphasizes the necessity of making it a real combine and not a mere formality, and recalls that there was an example in the United States a few years ago of an export agreement being actually worked, and then breaking down. It would be a catastrophe, in his opinion, if an international arrangement of the same kind were to fail in the same way through insufficient care being taken to make it completely binding on all participants.

One of the greatest advantages of international cooperation would, he thinks, be the control exercised under Mr. Kessler's scheme over the small producer. Every consuming market suffers from the attention of the independent seller, who buys a cargo of unbranded petrol or kerosene and sells it, sometimes diluted, at cut prices. The Kessler plan would apparently do much to eliminate this class of business by cutting off supplies from small and weak producers to price cutting distributors.

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Volunteer Committee Begins Survey

THE Volunteer Committee on Petroleum Economics has begun work on a report of national petroleum requirements from April to December, 1932. It has been announced that John W. Frey, Chief, Petroleum Section, U. S. Bureau of Foreign and Domestic Commerce, will act as chairman of the Volunteer Committee. Dr. Frey has been chief of the Petroleum Section for the past four years and is a recognized authority on petroleum economics. The report will be issued early in June at the same time as the American Petroleum Institute's report covering requirements for the same period is submitted to the Institute's mid-year meeting at Tulsa, Oklahoma.

New Soviet field at Dagestan under development.

Iraq Minister Signs B. O. D. Concession

British Petrol Crisis May Encourage Government Interference—R.O.P. Expanding Sales by Renewed Price Cutting—Iraq Petroleum Company's Pipe Order Partly Placed.

IN spite of persistent rumors to the effect that a considerable advance in petrol prices is imminent there is good reason to believe that the major companies have not discussed this matter for some weeks. More credence is due the report that some of the major companies are considering a second approach to the Government whose interest would be best served by an improvement in conditions. Some of the British petroleum companies feel that their representations were not made to the best advantage and a feeling prevails that Lord Inverforth may act as intermediary between the trade and the Government in presenting a plan that would embody a maximum import and minimum selling price limit. Lord Inverforth, through his interest in important petroleum companies and his friendly relations with members of the Government, would be an excellent negotiator. Taking the matter up with the Government for the second time might be expected to result in a quota plan.

SOME change becomes daily more important while conditions in the British petroleum market make it ever more difficult for the companies most interested to initiate a plan for improvement. The Soviets through the R.O.P. have entered the market with renewed energy after two weeks of quiet. Portsmouth has accepted their tender of 10–11/16 d. per gallon for over 500,000 Imperial gallons of petrol. None of the other companies entered a bid of less than 11 d. R.O.P. apparently has received instructions to expand at all costs. Supplies are being sold to small dealers ex tank at 2¾ d. per gallon; but even this low price is likely to prove more profitable than supplying Birmingham with petrol at 10 d. per gallon after paying tax of 8 d. leaving just 2 d. to cover cost of production, transportation and distribution in small quantities to various depots.

In addition to this activity in the petrol market the R.O.P. is beginning to cut prices on other petroleum products heretofore handled as a profitable sideline. Fuel oil has been sold for as little as 33 s. 9 d. per ton in spite of the quoted price of 60 s. and the R.O.P. is said to have made sales at 25 s. or lower. The same tactics are being applied to kerosene and lubricants: R.O.P. recently cut the price of white spirit 2 d. without consulting the trade although the loss of profits on these sidelines is a serious matter to many of the other companies who are losing heavily on petrol sales.

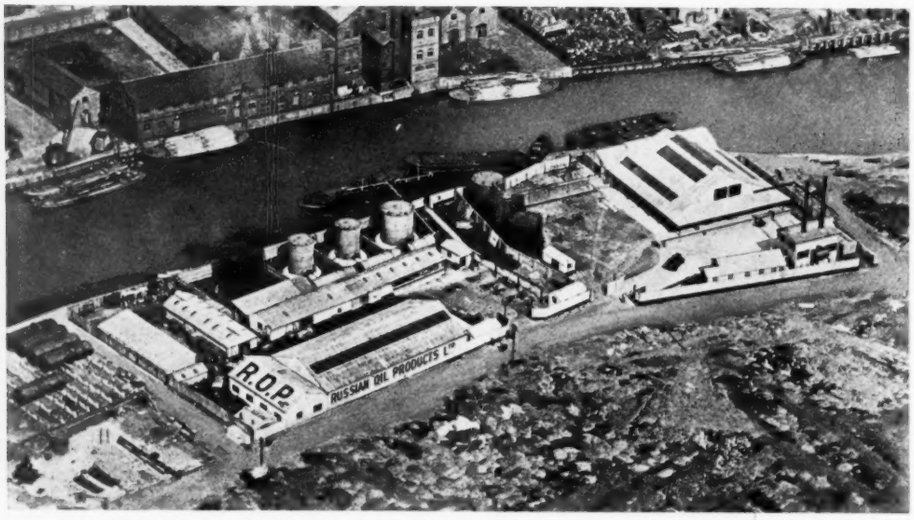
CONTRACT for the new concession to be granted to the B.O.D. Ltd. by the Iraq Government was signed by a representative of the former and Nuri Pasha, Prime Minister, at Bagdad, April 20 after some important revisions in the terms originally agreed upon between the Prime Minister and officials of the B.O.D. during Nuri Pasha's visit to London. The contract covers a concession on the left bank of the Tigris and extends for 75 years. The period granted the B.O.D. for the selection of districts in which to carry on exploitation has been fixed at seven years. Dead rent is fixed at £100,000 for the first year, increasing by £25,000 per year to an ultimate total of £200,000 but payment of dead rent ceases when oil transportation begins. Royalties amount to 4 s. per ton. No restriction as to the direction of the pipeline, general methods, or development program have been included. It is understood that the contract contains a stipulation that the control of the B.O.D. must be British. Of the revision of the terms by the Iraqi House of Representatives the most serious consists of advancing the period when cash payments become due.

Conferences by officials of the company in London have decided that the capital of the B.O.D. Ltd. should be increased to £1,000,000 as soon as notice of ratification of the concession arrived. The new capital will be furnished entirely by interests already engaged and no stock will be offered to the public. Conferences also discussed policy in regard to the Mosul Oil Company and the Mesopotamia Oil Company both capitalized at £100 which the B.O.D. considers making the operating companies for the Iraq concession, B.O.D. itself becoming a holding company.

Professor Alessandro Martelli, president of the A.G.I.P., replaces Signor Giarratana on the board, and Mr. Brown of Krupps has been elected to the board.

Operations on a large scale may be expected to begin in Iraq in October after the hot season which covers the period from May to October.

ORDERS for Iraq Petroleum Company's pipeline were divided 14 percent to Germany, 50 percent to France and 36 percent to Stewart and Lloyd's. Later, however, an order for 10,000 tons was given to the British Mannesmann Company in South Wales, the order being made up by pro rata reduction in the other allocations. Further orders are expected by the end of the year as present orders cover only about 1200 miles. There is a good possibility that the Iraq Government may direct that a third pipeline on this route be constructed as a public carrier.



Terminal of the R.O.P., Soviet petroleum distributing organization in England.

Financial Organization Key to Soviet Problem

Present Soviet Program Leaves No Margin of Financial Safety thereby Jeopardizing German Financial Stability. Extension of Credit Period Essential to Fiscal Survival.

The situation which has now arisen in the petroleum industry gives the Soviet government a chance to prove that it is willing to join hands with the industrialists to bring about stability in the oil markets of the world. If the Russians manifest a proper spirit of cooperation and are reasonable in their demands the success of this experiment might well lead to more general measures which would facilitate the industrialization of Russia, give her a proper standing in the concert of nations and bring the commodity markets upon which she is no less dependent than other nations, back to their true level.

THE key to the Russian problem is finance. Where Government and industry are one the credit of the Government is the controlling factor in industrial expansion. No understanding of the Russian situation today is complete without a knowledge of the Soviet financial position and it must be admitted that this is a very obscure phase of Russian economy. When the available facts are assembled it will be realized that the Soviets' ability to go forward with their ambitious plans depends in the last analysis on being able to substitute some long time credit arrangement for the present costly and uncertain scheme of short term credits.

Sudden arrest of the Russian program has been avoided only by the unusual credits now being guaranteed by the German Government. The desperation of German industrialists has forced this hazardous and imprudent course upon a Government which was already in a difficult financial position. It may well be wondered that Germany's creditors have permitted the Reich to incur these vast liabilities in this dangerous period.

The Russian position at the moment appears to be about as indicated in the accompanying table.

The accompanying tabulation shows clearly the lack of any margin of safety and indicates how the main weight of Russian financing has fallen on financially weak Germany.

The anomaly of this arragement and its grave danger has led to severe criticism in Germany and elsewhere. Speaking a few weeks ago at Dusseldorf Dr. Hjalmar Schacht, former president of the Reichsbank said in part:

An accounting survey would show that we derive profits from our transactions with Moscow, if looked at from the point of exchange of commodities. Several German trading concerns have profited by the sale of German goods to Russia, but in a general way, it must be stated that all our transactions with the Soviets have been losing propositions for our National Economy at large. Long term credits granted by Germany to the Soviets have caused the freezing in of our assets to an extent of 2,000,000,000 marks and have reduced the gold reserves of the Reichsbank by at least 500,000,000 marks (in value paid for raw materials used for Russian orders). The general balance of our transactions with Russia shows that we are losing on the same apart from the fact that the sale of Russian raw materials in Germany is causing harm and losses to our internal trade as well as to agriculture. The prices at which the Russians are getting rid of their products are as a rule 50 percent below market value.

Russian Obligations and Sources of Payment

DUE:	
Germany 2,000,000,000 marks or	$480,000,000
France from $15,000,000 to	20,000,000
England	30,000,000
U. S. A.	20,000,000
Other countries	20,000,000
Total	$570,000,000
Payable in 1932	$280,000,000-$300,000,000
SOURCES OF PAYMENT:	
Income from exports	$150,000,000
Gold output	40,000,000
Receipts of Torgsin (Money sent into U.S.S.R. by relatives)	50,000,000
Reserves (Practically all)	50,000,000
Total available revenue	$290,000,000

A country which has to depend on foreign credits as it has to depend on air for breathing has no right to extend long term credits to other nations. Such a policy has jeopardized our own position and has compelled us to reduce our rate of production. How many big and solvent business concerns in Germany have been compelled to stop payments during last year owing to lack of funds? All of these could have been saved at an investment expenditure of 1,000,000,000 marks, which is only half the amount of credits extended by Germany to the Soviet. The crushing and wiping out of hundreds of enterprises in Germany is costing our National Economy hundreds of millions of marks which is probably double or threefold the profits accrued on our transactions with the Soviets and this undoubtedly is bringing us nearer to a catastrophe.

Our industrial leaders have believed that Soviet orders will reduce unemployment in Germany—it has turned out the other way and now we are cutting off our noses to spite our faces.

Our transactions with Moscow have provoked justified accusations from our creditors abroad that we have converted the short term credits extended to our banks into investments over periods of three and four years in Russia the solvency of which is far from being indisputable, at least at present. Is this not a good trump in the hands of our political opponents?

While in the United States I was asked on several occasions by American industrialists to explain the reasons of such a willingness in Germany to extend long term credits to Russia which has induced the Bolsheviki to ask for similar credits elsewhere. I was also reminded of the fact that Germany was operating on funds which were borrowed from foreign sources and this fact ought to have warranted caution in redistribution of credits. I explained that it was unemployment which made us hunt Soviet orders and that we had encountered Czechoslovakian and Italian readiness to grant long term credits and we simply were compelled to do likewise.

What have German industries to expect in case the Soviets fail to repay their debts?

Our transactions with Moscow and the billions of credits extended have proven advantageous to Moscow and have done us a lot of harm. We have to be ready for the moment when we shall not be able to sell any more to Russia. Under the most favorable circumstances and under strenuous efforts Moscow may manage to pay off her debts; however, this will be done under the condition that Germany will buy at least 50 percent of the amounts due in raw materials and manufactured products from Russia.

Further we will also have to follow up an established precedent to extend new credits for every mark repaid to us on acceptances which fall due. In other words we shall never be in a position to free ourselves from an obligation to extend long term credits to Russia to the extent of at least 1,500,000,000 marks.

What is going to happen to our industrial concerns which have extended the credits and to the Government which has guaranteed the same in case the predictions of the French, English and American industrial leaders come true; that is that the Five Year Plan will fail and that the Soviets will earlier or later have to stop payment of the debts incurred. Under such circumstances we shall not only lose 2,000,000,000 marks, half of which will fall as a burden on the taxpayers but we shall also lose our credit solvency abroad.

I am reluctant to pass a personal opinion on the trustworthiness and longevity of the Soviet form of Government in Russia. It is not easy to analyze the question but there is no doubt about the fact that the prevailing policies of Russia to continue the building of ambitious plans on funds drawn from credits extended outside of the country is bound to fail. It is by no means a sound policy to build and to erect on borrowed funds such gigantic projects which under the most favorable circumstances may become paying propositions several decades later. Meanwhile, however, hundreds of millions are required to pay off acceptances and other obligations which mature and in order to do so the gold reserves of the country have to be drawn upon and these amount to probably a score or more million dollars. The best of experts on Russian finance, my former

colleague, Mr. Sheinman, the former State-bank president has stated that the gold reserves of Soviet Russia represent "several tens of millions of dollars" at the most.

Dr. Schacht cites one of the embarassments incurred in trying to finance Russian trade viz. the necessity for admitting large quantities of Russian products into Germany. An example of the adverse effect of this upon others trading in Germany is to be found in the petroleum industry, where Russia has demanded an unwarrantable import allotment to the disadvantage of better established distributers.

Russia's desperate need for money to carry on with has had many ill effects on the world and the U.S.S.R. itself has been one of the principal sufferers. It must be admitted that all external obligations to date have been promptly met, but uncertainty, lack of information and the failure of Russia to win a better international standing has caused the Soviet Government to be rated as a poor credit risk. The fact that Russian trade acceptances are quoted at discounts as high as 40 percent, where Government guarantees are wanting and because even in Germany guarantees extend only to the amount of 70 percent of purchases means that the Soviets must pay two prices for what must be bought abroad.

The need of raising money on short notice to meet maturing obligations has resulted in forced marketing of the principal Soviet export commodities. This pressure on an already weak and falling market has caused further price declines so that expanding U.S.S.R. exports have failed to bring increased revenue.

A further unfortunate fact is that the Russians are not free to buy in the best markets but must confine their purchases to markets where credit is available. This has been a severe handicap to technical efficiency. The Soviets today for instance need large quantities of American oil field and refinery equipment but cannot draw on American sources because of inability to finance in the United States. Consequently operations are being carried on with less modern equipment purchased where credit can be commanded and with inferior and often badly made substitutes of home manufacture. Although the statement has been made by the Soviets that American purchases were curtailed as a result of the feeling engendered by the Fish Committee inquiry into communist activity in the United States the statement is wholly without foundation in fact. Reduction in American purchases may be attributed entirely to financial difficulties which were greatly accentuated when England went off the gold basis.

For a long time Russia was selling more in England than she bought in that country and transferring her credit balances to the United States where purchases exceeded sales by a wide margin but the decline in the pound sterling made this process too costly to continue.

It has been estimated by the University of Birmingham Bureau of Research into Russian Economic Conditions that since 1920–21 Soviet Russia's imports have exceeded the value of exports by more than 1,175,000,000 Rbl. which is just about the amount of the estimated foreign debt.

There can be no doubt that the situation has now become acute. Failure has attended recent Russian efforts to secure credits in France, Japan, Canada, Spain, Hungary and Norway and there is considerable opposition to the suggestion that the British Government should adopt a more liberal policy toward Soviet credit.

A fresh campaign has been started to secure recognition by the United States

Russian Oil Products, oil storage and rail terminal in England.

Russian derricks, primitive and modern are exploiting the huge oil resources of the Soviet Union.

Government and it is possible that this may become an issue in the presidential election campaign. A tempting bait of orders is being dangled before American manufacturers. It can be stated definitely that recognition alone would be entirely insufficient to bring any considerable volume of additional business to the United States. The Russians bought American goods while they could regardless of recognition and recognition will not remove the present limitations on this business unless the United States Government is prepared to follow it by a scheme for extending the credit of the Government by a guarantee that those American manufacturers who sell to Russia will be protected from undue risk.

There is at least this to be said in favor of non-recognition. It constitutes no serious bar to ordinary commercial relations and puts the United States in the strongest possible position to deal effectively with Soviet activity in America. However, the theory that the Soviet system constitutes any menace to American internal tranquillity may be dismissed as chimerical. It is quite apparent that those in power today in Russia are much less concerned at the moment with extending Communism to the rest of the world than they are with making it work at home.

The development of Russia is undoubtedly a desirable thing for the world at large but it is folly for the capitalistic countries to facilitate this unless there is some assurance that Russia is willing to cooperate in some orderly plan which will insure that the output of Russian industry is to be used to enrich the life of her own people and not to demoralize international trade. Russia is entitled to a reasonable share of the world's commerce. She is entitled to have the money needed to reconstruct and modernize the country on reasonable terms to be repaid over a period of many years. Both will be forthcoming when Russia demonstrates that her attitude towards the balance of the world is also constructive.

The situation which has now arisen in the petroleum industry gives the Soviet Government a chance to prove that it is willing to join hands with the industrialists to bring about stability in the oil markets of the world. If the Russians manifest a proper spirit of cooperation and are reasonable in their demands the success of this experiment might well lead to more general measures which would facilitate the industrialization of Russia, give her a proper standing in the concert of nations and bring the commodity markets upon which she is no less dependent than other nations, back to their true level.

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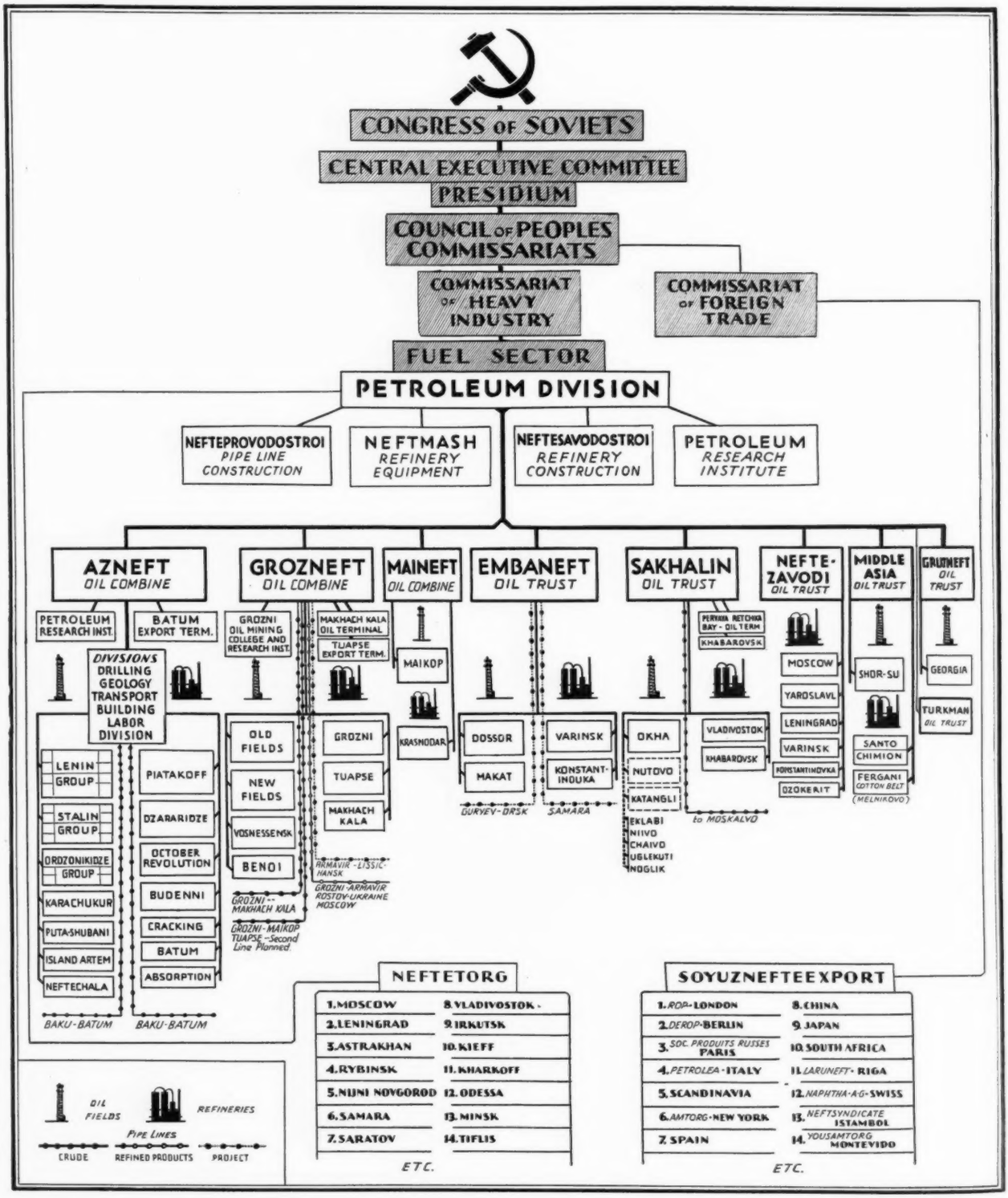
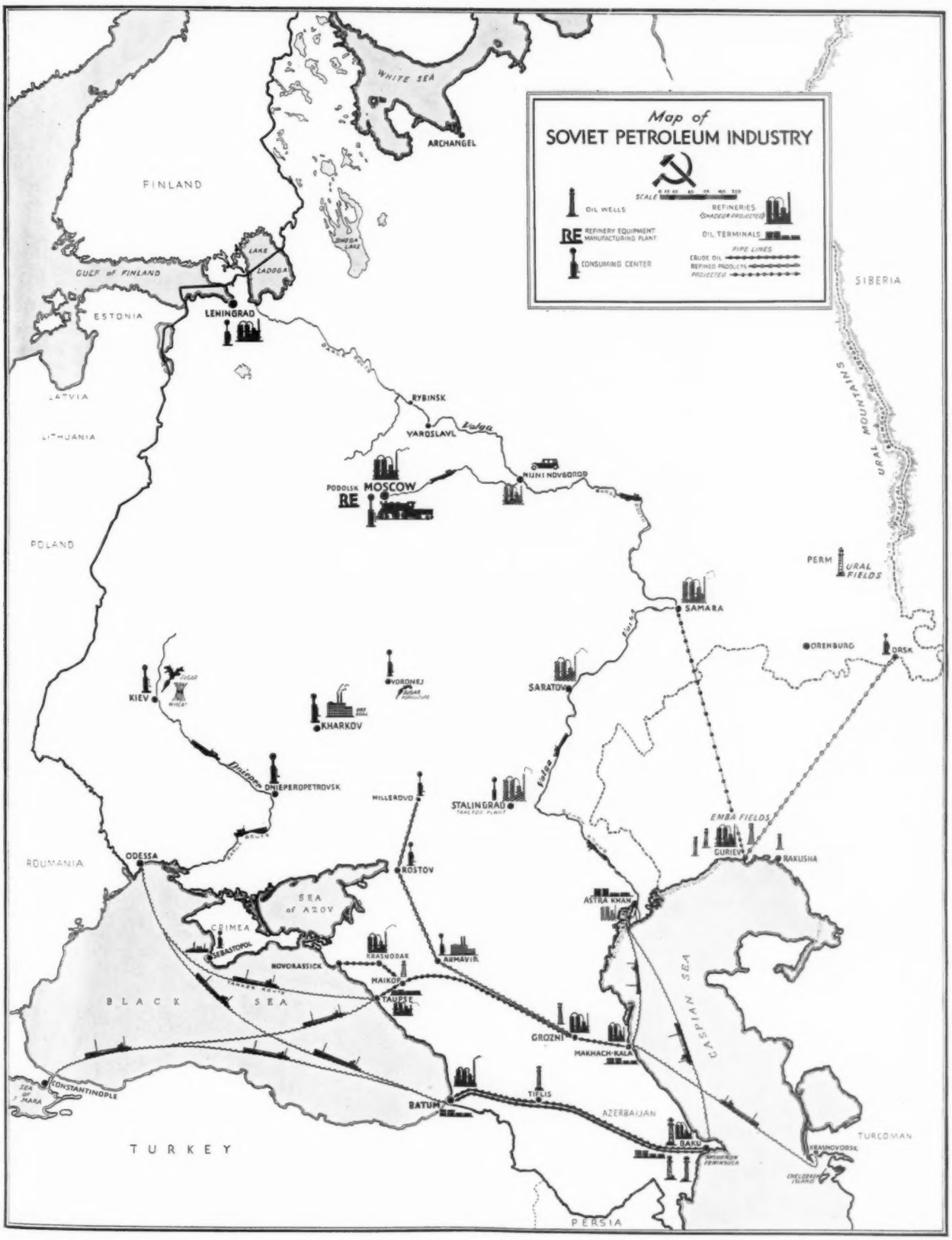
Russian students in a petroleum technology school. Great importance is attached to the proper training of young workers guaranteeing the permanency of the Soviet Republic and correcting the greatest handicap from which Russian industry suffers—lack of skilled workers and trained engineers.

Soviet Export of Petroleum Products 1931

Destination	Barrels
England	7,513,000
Italy	7,284,000
France	6,502,000
Germany	3,745,000
Scandinavia	2,178,000
Turkey	1,134,000
Austria-Hungary and Czechoslovakia	1,373,000
Africa	1,178,000
India	1,162,000
Egypt	1,127,000
Belgium	1,064,000
Spain	1,105,000
Japan	840,000
Persia	445,000
Greece	409,000
Baltic States	402,000
China, Manchuria and Mongolia	344,000
South America	92,000
Bunkers	1,680,000
All other	581,000
Total	40,158,000

Chart of the Administration of the Soviet Petroleum Industry




Map of
SOVIET PETROLEUM INDUSTRY
SCALE
OIL WELLS
REFINERIES (SHADED=PROJECTED)
RE REFINERY EQUIPMENT MANUFACTURING PLANT
OIL TERMINALS
CONSUMING CENTER
PIPE LINES
CRUDE OIL
REFINED PRODUCTS
PROJECTED
WHITE SEA
ARCHANGEL
FINLAND
GULF of FINLAND
LAKE LADOGA
ESTONIA
LENINGRAD
LATVIA
LITHUANIA
POLAND
RYBINSK
YAROSLAVL
Volga
PODOLSK
MOSCOW
RE
NIJNI NOVGOROD
SIBERIA
URAL MOUNTAINS
PERM
URAL FIELDS
SAMARA
ORENBURG
ORSK
SARATOV
KIEV
KHARKOV
VORONEJ
DNIEPEROPETROVSK
STALINGRAD
MILLEROVO
EMBA FIELDS
GURIEV
RAKUSHA
ROUMANIA
ODESSA
ROSTOV
SEA of AZOV
ASTRA KHAN
CRIMEA
SEBASTOPOL
KRASNODAR
ARMAVIR
NOVOROSSICK
MAIKOP
TAUPSE
BLACK SEA
CASPIAN SEA
GROZNI
MAKHACH-KALA
CONSTANTINOPLE
SEA of MARA
BATUM
TIFLIS
AZERBAIJAN
BAKU
TURCOMAN
KRASNOVODSK
TURKEY
PERSIA

Tremendous Oil Resources of Soviet Union

Only Vague Estimates of the Vast Though Sometimes Inaccessible Crude Deposits in Old and New Fields of Soviet Russia Exist Indicating Ample Petroleum Resources.

THE oil resources of Soviet Russia, the very foundation of the ambitious Second Five Year Plan, are of the utmost importance in a picture of the possibilities that the petroleum industry holds for Russia and for the rest of the world. Since early in the present century the oil reserves of Russia have always been considered large in relation to the quantities being produced and in relation to the reserves of other oil producing countries of the world. Their actual extent, even now, is only vaguely suggested by the systematic geological exploration undertaken in a small way by the Soviets. All indications, however, point to the fact that Russian oil reserves are tremendous.

No extensive exploration was carried on under the czarist régime by the private companies exploiting the oil reserves on the shore of the Caspian Sea. Such exploration was hardly necessary as sufficient quantities lay close to the surface in fairly concentrated sections. In addition to the presence of these easily accessible supplies, the belief that oil exploration was too large and expensive a task for private capital was widely held in Russia, where it was believed that exploration was the work of the Government. Professor G. Soroker quotes the report of the Finance Committee of the State Duma, which in 1908 made the statement that, "No private persons could afford to invest sufficient capital in such an undertaking as oil prospecting, especially if such work had to be done on a large scale, because it is for the benefit of the State as a whole."

Directly after the nationalization of the petroleum industry, the work of exploration was postponed in favor of producing the greatest possible quantity of petroleum from existing wells. It was not until the first Five Year Plan brought systematic planning to the Soviet industry that considerable thought was given to determining the oil resources of the nation and uncovering them for production in the accomplishment of the Five Year Plan. On November 30, 1930, the Central Committee of the Communist Party emphasized in a decree the necessity for extensive exploration to uncover deeper horizons in the old fields and to establish new fields at strategic points to supply domestic demand.

Great impetus will be given this work by the plans for production of some 630,000,000 bbl. of crude by 1937 as outlined in the Second Five Year Plan. Careful exploration is going forward at present in a large number of potential oil fields all over the Soviet Union.

Reference to the map reproduced on another page of this issue will be of assistance in picturing the relation of the great oil producing areas of the Soviet Union to each other and to consuming centers and transportation facilities.

Padjikistan field, near Afghanistan

Known oil resources of Russia are confined to the Caucasus region, where the oldest fields are located, to the Emba group of fields on the northern shore of the Caspian, to Central Asia, east of the Caspian Sea, to the Urals and to Siberia and Sakhalin island. Old fields, where drilling has been going on for a number of years, offer extensive additions to the nation's reserves because of the number of producing horizons, one below the other, that exist in Soviet fields. Roughly there are two main divisions, the upper and lower strata divided by approximately 150 meters of clay. These strata are again subdivided, sometimes into as many as 10 or 12 producing strata which are tapped, one after the other, according to the Soviet plan. While exploitation of one producing horizon is being carried on exploration of the one below is in progress.

Recent success in uncovering the second important producing horizon has vastly increased the known reserves of Soviet oil. In addition to this source new fields are being opened up at Emba and in Central Asia, Siberia, and the Caucasus.

In the area surrounding the Apsheron peninsula, oldest and most prolific of Russia's fields, a number of new fields are being opened up. Deep drilling of old wells has succeeded in many of the 22 established fields on the Apsheron peninsula in producing gushers from horizons below the present levels. Exploration well No. 132 at Bibi Eibat opened a gusher producing 10,000 bbl. of higher grade oil than has been obtained from the rest of the Bibi Eibat field. Bingadi of the Baku group on the Apsheron peninsula is typical of many of the 22 Baku fields. Bingadi was considered practically exhausted until deeper drilling was undertaken with the result that a 4,500 bbl. per day well was brought in at 2,500 ft. and further drilling has led to a considerable rejuvenation of the field.

A few miles west of the peninsula, new fields have been discovered. A well at Ker Gas producing 20,000 bbl. per day has encouraged the belief that drilling around the base of the Apsheron peninsula will lead to the establishment of a number of new fields fully as important as those now producing on the peninsula itself.

Still further west and slightly to the north around Tiflis partially successful exploration is being carried on. In this region two wells are at present producing and 13 wells are being drilled.

In the North Caucasus, second most

important oil area in the Soviet Union, the Grozny group is under extensive exploration. Less work is being done in the old and new Grozny fields than is being done in the established Baku fields but adjacent to the Vosnessensk field some 30 wells are being drilled in what is considered a very promising location. Other prospecting in this section is being carried on at the Bragunsk deposits and at Gudermess. Altogether there are about 3500 hectares of new oil lands in this region where over 100 wells are being drilled.

Another important region holding vast future possibilities for Soviet oil is the Emba field located on the northern shore of the Caspian Sea. Most of the favorable locations in this region consist of dome-like structures. Several salt deposits have been discovered and geophysical and gravimetric exploration points to the presence of tectonic features favorable for oil deposits. Drilling in this region, however, promises to be more difficult than elsewhere due to the complicated structures and overhanging formations. In addition to these difficulties, the Emba district is very sparsely inhabited, while lack of roads and water make the region difficult to explore.

A considerable distance to the east of the Emba region is the Middle Asia trust producing at present minor quantities of oil and undergoing some prospecting which has not as yet advanced to a stage where definite results have been obtained.

Prospecting in Siberia has uncovered a gusher at Lake Bikal producing a high quality of oil in large quantities. This discovery well has led to the belief that a large part of Lake Bikal covers a huge potential field of high quality oil. During the past few months equipment has been rushed to this location and prospecting work is being carried on without further definite results as yet.

Some indications of oil have been uncovered in the Urals where widespread prospecting is being carried on. While geophysical exploration indicates the presence of oil no accurate information is available as yet.

Close set derricks in prolific Soviet oil field.

Another oil reserve of the Soviets exists on the island of Sakhalin. Present known supplies at Sakhalin are sufficient to supply Far Eastern domestic and export demand and not much exploration work has been undertaken as yet, although every indication points to extensive oil deposits. At least these are considered of sufficient importance to warrant the building of refineries at Vladivostok and Khabarorsk.

Even at this time when Soviet oil prospecting has been going on for a comparatively short time indications are that vast reserves are available within the Soviet borders. Conditions which forced the Soviets to outline a program of exploration in sections where no large commercial deposits were indicated have been removed and the development of present known supplies will be more than sufficient to meet the requirements of the Second Five Year Plan.

One of the few estimates that promise a degree of accuracy is the one compiled at the London Conference in 1924 on data furnished by Professor Gubkin:

Total Soviet Petroleum Resources Estimate

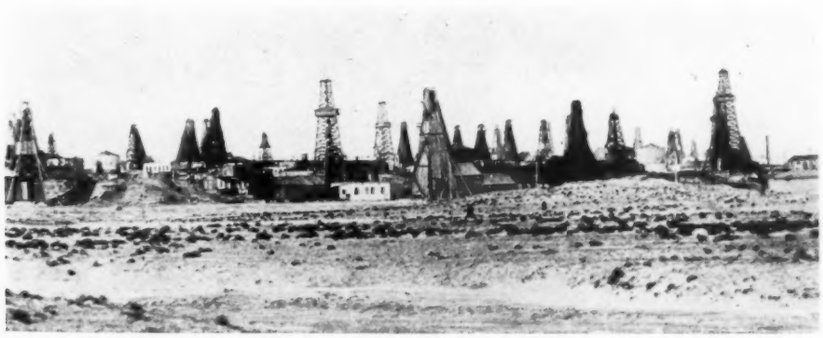
Region	Metric tons
Baku	1,442,000,000
Grozny	900,000,000
Ural-Emba	262,000,000
Sakhalin	98,000,000
Kuban	65,500,000
Transcaucasian	32,700,000
Ukhta	32,700,000
Transcaspian	32,700,000
Middle Asia	16,400,000
Total known resources	2,882,000,000

Professor Gubkin recently stated that no better estimate of the petroleum wealth of the Soviet Union was available now. Since 1924 the quantity of oil removed from the various fields has been more than counterbalanced by the discovery of new producing horizons and new fields. The old fields of Azneft are variously estimated at 200,000,000 tons by V. Bilibin and 400,000,000 tons by Professor Golubyatnikoff.

No definite estimate of the actual quantity of petroleum reserves in the Soviet Union is possible as yet. Limited prospecting undertaken within the past few years forms an entirely inadequate basis for such an estimate. For the immediate future it is obvious that there is more than sufficient petroleum to furnish the quantity demanded by the Second Five Year Plan. By the end of that time (1937) more accurate information on the potentials of various Soviet fields should be available.

The oil exists but the question of its accessibility must be answered by Soviet prospecters during the next five years. The high cost of prospecting persists in spite of all the efforts of the Soviets to reduce it. Even prospecting in remote and inaccessible regions may prove less difficult than establishing production and transporting the oil from the field to refineries and centers of consumption.

Modern steel derricks may be seen replacing obsolete wooden type in this Soviet field.



Soviets' Striking Contributions to Drilling Practice

Using Best Foreign Methods and their Own Solutions of Local Problems, the Soviets Have Increased Production Tremendously. Progress and Difficulties.

Kapelushnikoff drill.

VAST strides have been made in the production of crude oil in the Soviet Union within the past few years and even more ambitious plans are being laid for the future. Production of 156,342,900 bbl. of crude oil during 1931 put Russia in second place among the oil producing nations of the world, furnishing 11.38 percent of the world's oil supply. Production in 1931 represented an increase of 26,387,483 bbl. over Soviet production in 1930. The importance of these large increases is better understood when they are considered in relation to the plan for 630,000,000 bbl. of crude which is to be produced in 1937 according to the Second Five Year Plan.

The great oil trusts of the U. S. S. R. which are expected to produce 191,800,000 bbl. of crude during this year are rated in the following order of importance: Azneft, 58.5 percent of the 1932 production, Grozneft, 33.0 percent, Maikop, 5.3 percent, Embaneft, 1.4 percent, Sakhalineft, 1.2 percent, Middleasianeft, 0.4 percent, and Turkmaneft, 0.2 percent.

One of the outstanding accomplishments of the Soviets since the nationalization of the petroleum industry has been the improvement in drilling practice. Prior to the world war an antiquated system of rod drilling was being used in Baku, most important of the oil fields both before and after the war. Using this system, drilling a well to a depth of 800 meters was a matter of two to three years and required the use of sometimes as many as 17 strings of casing. The only variation from this type of drilling was represented by a few wells where rotary drilling at Grozni was tried experimentally just before 1917. It is also true that some cable drilling was being carried on at Grozni at this time.

Planned 1932 Production

Trusts	Barrels
Azneft	112,560,000
Grozneft	63,200,000
Maikop	10,200,000
Embaneft	2,570,000
Sakhalineft	2,100,000
Middleasianeft	820,000
Turkmaneft	350,000
Total	191,800,000

Steps were taken during the 11 years of nationalization of the industry to replace all drilling in proven fields with rotary rigs, representing the latest development in American drilling practice and so successful have these steps been that in 1930 only one percent of all drilling used the rod system, 12 percent used cable drilling and the balance was accomplished by rotary drilling.

In addition to making use of the best practice being followed in other countries the Russians have done an appreciable amount of work in solving their own problems. The best known and perhaps most important Russian contribution to drilling technology is represented by the Kapelushnikoff turbo drill, admirably suited for deep drilling, for the elimination of crooked holes, for increased speed of drilling (a vital factor in the accomplishment of Soviet economic plans) and for reducing costs of drilling.

The turbo drill averages a speed of 650 to 820 ft. per rig per month at a depth of 2500 ft. and requires much less power than other types of drill as rotation of the entire system of drilling pipe is eliminated. Some 18 turbo drills are now in successful operation in the Soviet Union. A larger number were ordered for 1931 but difficulties in the manufacture of the equipment at Vomt and the Baku machine shops delayed production. During 1932 plans call for the drilling of 215,000 ft. by the Kapelushnikoff drill. Tests of the drill in the United States by the Standard Oil Company of N. Y. and The Texas Company indicated that the turbo drill could obtain a speed of 9 ft. per hour in the same ground that a rotary drill penetrated at the rate of 5.5 ft. per hour. A second test in more difficult formations gave a speed of 6.2 ft. per hour for the turbo drill against 3.7 ft. per hour for the rotary rig.

In addition to this development and numerous minor improvements suggested by various workers for the improvement of the rig, Professor Skvorzof has de-

Emba oil field, southwest of Kazakstan.

veloped a drilling device that accomplishes somewhat the same purpose as the Hild differential drive.

Pipeless deep pumping is a Soviet development that has attracted attention recently. The system is admirably suited to the industry in Russia because of the lack of pipe. Developed by engineers Bortz and Goyeff, over 25 wells are at present pumping satisfactorily at Baku, using the pipeless system. Some difficulties were encountered in its use at Grozni but it is expected that these will be overcome in the near future. Pumping plans for 1932 at Baku include the use of the pipeless pumping system in about 200 wells.

The drilling regulator, also developed in Russia by the Soviets is a simple but effective device for registering the strata through which the drill passes, bit load, duration of drilling and direction of the drill stem. Warning is given by a bell when the bit encounters a stratum which is likely to cause deviation of the hole from a straight line.

Other improvements of the utmost importance for deep well drilling are the facing of drilling tools with hard alloys, use of modern bits and core drills, and cementing the holes according to the Perkins method, unknown in Russia prior to the Revolution. Rotary drilling and the use of this method of cementing has reduced the number of strings of casing necessary for use in the wells. One or sometimes two strings of casing have been found to be all that are necessary, while the use of deep pumping and air and gas lift have reduced the diameter of the casing to four or six inches.

Simultaneously with the introduction of rotary drilling a program for the electrification of all oil fields was launched and has proved entirely satisfactory. Only prospecting wells are now drilled by steam power, electricity being used in all established fields.

Production by Various Methods
1930

Method	Metric tons
Deep pumping	4,990,000
Airlift	3,700,000
Gaslift	30,000
Bailing	290,000
Total	8,910,000*

* Exclusive of crude produced from gushers.

Bailing was the universal method of bringing the crude to the surface at the time the nationalization of the industry got underway. At present this method has been largely replaced by the introduction of deep pumping and airlift. In spite of the established belief that deep pumping was entirely unsuitable for use in the Soviet Union considerable success has been achieved with its use. Airlift has also proved satisfactory although at present indications point to the substitution of gaslift for airlift.

As typical of the results obtained by the use of these improvements the Azneft succeeded in effecting a reduction from 210 Rbls. 68 kopecs per meter per well cost in 1925 to 109 Rbls. 72 kopecs per meter per well drilled in 1930. During the past year, however, less success has been obtained in reducing the cost of drilling.

On the other side of the ledger appear some difficulties tending to slow up the

Average Drilling Speed in U. S. S. R.
Per Rig, Per Month

	1928/29	1930	1931 planned	1931 actual	1932 planned
Exploration ..	316.8	375.5	559	373.2	478.5
Exploration- Exploitation..	243.9	225.1	438	231.7	429.0
Exploitation ..	213.2	249.5	352	180.5	297.0
Average	289.4	320.8	485	311.5	435.6

speed of drilling and to counteract some of the excellent results obtained by the introduction of new production methods. Chief among these are stoppages and inadequate equipment.

While fully 85 percent of all drilling in Russia is being carried on by use of the rotary rig, the lack of spares and all kinds of tools for replacements increases the percentage of stoppages to fully 50 percent of the time consumed in drilling. Some 30 percent drilling time is lost in unproductive interruptions, 10 to 12 percent is lost in swabbing and testing, and 10 percent is lost in other ways. The restriction on the importation of drilling equipment, coupled with the inability of the equipment manufacturing plants in the Soviet Union to turn out drilling rigs suitable for deep drilling, may precipitate a serious situation. Light drilling equipment is being manufactured in Russia with a degree of success but the production of heavy drilling equipment, necessary for the new deep drilling being undertaken in the old and new fields is anything but satisfactory.

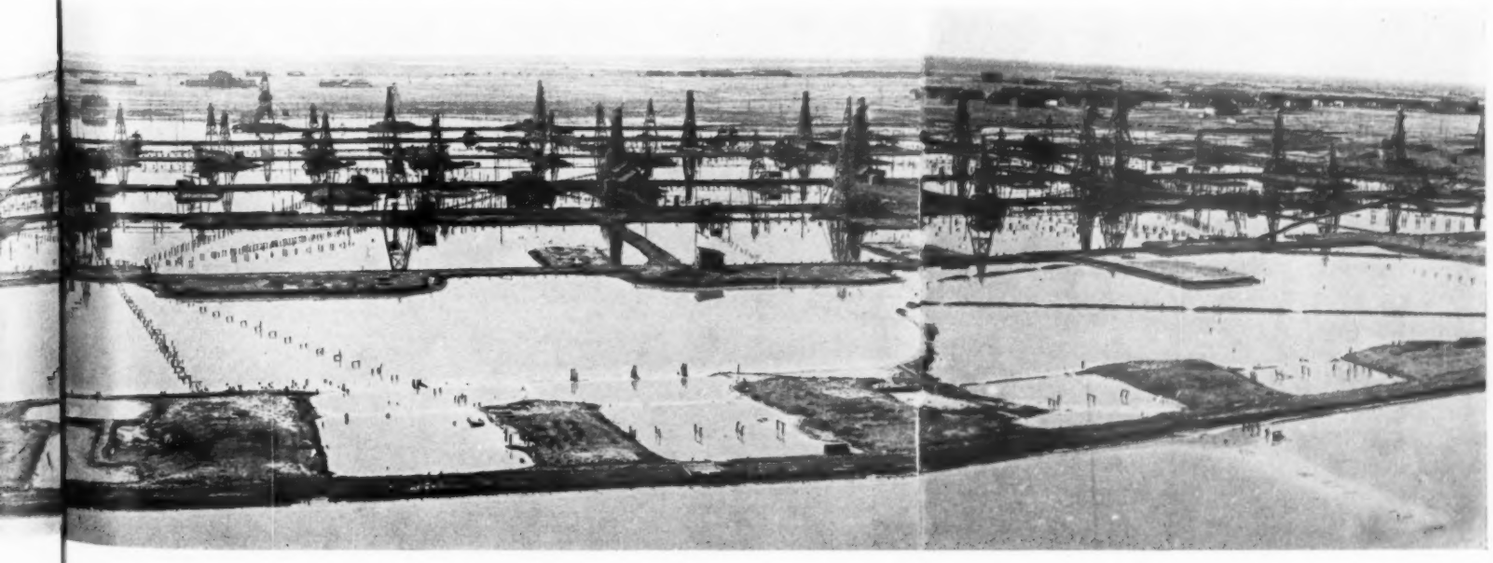
In this as in other branches of the industry, the Soviets suffer through lack of trained personnel, a deficiency which they are bending every effort to correct.

Modern equipment, California type, in use on Russia well.

Standardized Production Equipment

Hoists: Emsco and Ideal ball bearing and manganese steel herringbone type.
Crownblocks: California Regan type.
Casing and caps: Regan type for 75 tons.
Swivels: Emsco type.
Safety reels: Orloff type, domestic design.
Rubber armored hose: domestic type.
Rotary disc bits: Guiberson 4 disc bits.
Working pipe: 3½ and 4 in. for 33 ft. length; 6 in. for 52 ft. length.
Eccentric tongues for drilling pipe: Dunn type 4 x 6 in. and 3 to 8 in.
Drilling pipe elevators: Dunn and other American makes.
Core barrels: Huges type.
Casing pipe: seamless steel or cast iron pipe of odd gauges.
Four speed drilling hoists: Wirth model.

One of U. S. S. R.'s great potential fields.



Soviet's Growing Refinery Industry

Shifting Emphasis from Increasing Exports to Supplying Domestic Requirements, Transportation Difficulties and Considerations of Defence Dictate Location of New Plants.

EXPORT demand for finished oil products has been until recently the governing factor in Soviet Russia's refinery construction program, in selection of both the geographical location of the plant and the type of processing equipment. In the past the tendency has been to make proximity of raw materials and convenience of export facilities the chief considerations, but with domestic requirements increasing from 15 percent in 1925–6 to an estimated value of 55 percent of all refined products for 1933, considerable attention is being given to construction of refineries conveniently accessible to principal points of domestic consumption. The principal object of the old refineries was to produce oil for lighting, lubricating and fuel purposes with little attention given to yield of motor fuels and light products. Increased demand for these latter commodities, both at home and abroad, has developed interest and endeavor in the direction of increased outputs of the more volatile materials.

Location of Refineries

BUILDING of the chief refineries in the past was confined to Baku and Grozni, while there were several smaller plants located at such places as Yaroslavl, Moscow, Lenigrad, and Odessa. These refineries were supplied with crude from the two oil centers and their total capacity was about three percent of the crude production of pre-war Russia. Following the revolution several plants were located at Batum and Tuapse, but the bulk of the refining capacity has been erected at Baku and Grozni and no further additions are contemplated for the former cities.

In the future, in so far as the erection of plants will be largely dictated by domestic requirements, first consideration will be given to avoiding congestion of railroads in handling raw materials and supplies needed by the refineries as well as finished materials processed by them. Other factors that will be taken into account are the most favorable social-economic conditions for labor and national defense.

According to the First Five Year Plan of the oil industry the following points were designated for erection of pipe stills and cracking units along the Volga River: Astrakhan, Saratov, Samara, Stalingrad, Nijin Novgorod, Rybinsk, Perm Yaroslavl and Moscow. All of these refineries were to process crude from the fields of Baku.

Grozni crude was expected to be carried to the Ukraine and refineries were to be erected at Armavir, Rostov at the Donbasin and one or two points between the Donbasin and Moscow.

Emba fields were to supply the Ural Kuznetz basin, Western Siberia and Kasakstan with refineries located at strategic points. Middle-Asia oil fields were to supply the cottonbelt with a refinery to be erected at Melnikovo. Sakhalin was to supply the refinery at Vladivostok for export and the one at Khabarovsk for the home market of the Far East.

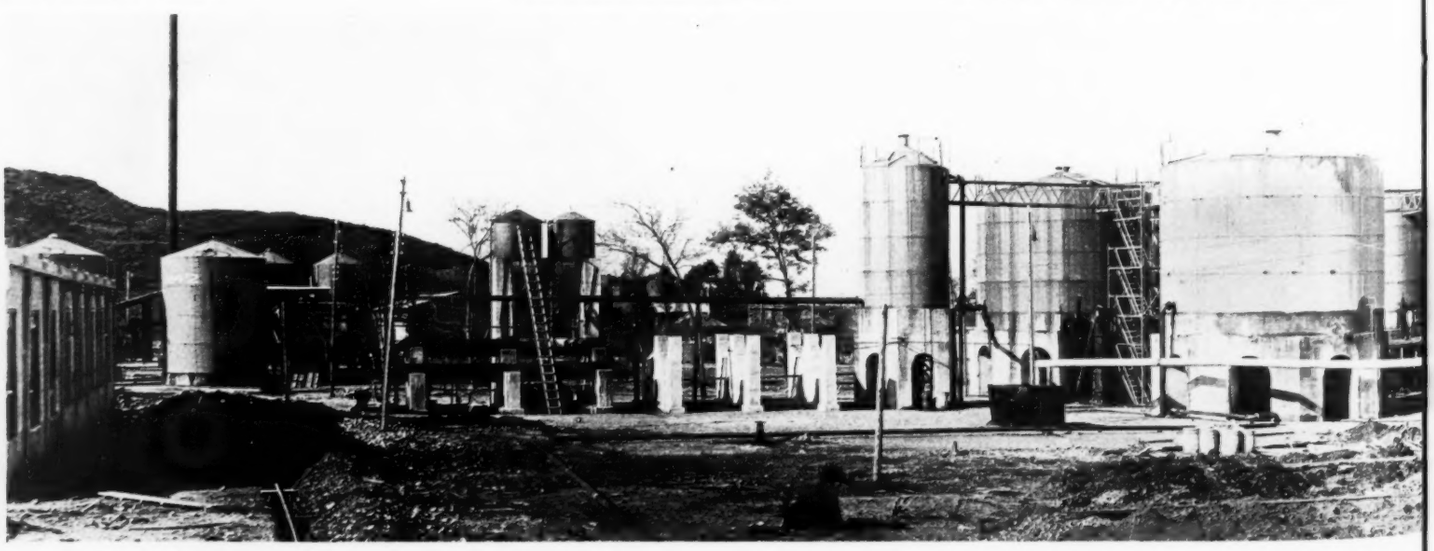
The building of refineries will doubtless be considerably delayed by the lack of suitable transportation facilities. Until a definite program for the construction of a transportation system (covered elsewhere in this issue) is evolved, it will be difficult to determine the exact location of the projected refineries.

It may therefore be assumed that with plant capacities at Grozni and Batum definitely stabilized by the shift of emphasis from export to domestic consumption, future construction will be concentrated along the Volga River. Two points of strategic value are Saratov for distribution west of the Volga down to Lenigrad, and Samara for the region east of the Volga. Nijin Novgorod and Yaroslavl as refining points may not sufficiently justify the expected consumption demand as to warrant large installations. Although Leningrad is an important industrial city, the matter of national defense raises serious objection to it as refinery site. Around the plants in the Volga sector will be concentrated the greatest number of cracking and new lubricating oil units. Baku will be required to supply the future export market as well as excess home consumption.

Equipment Construction

IN ADDITION to simple distillation and treating equipment for gasoline, kerosene,

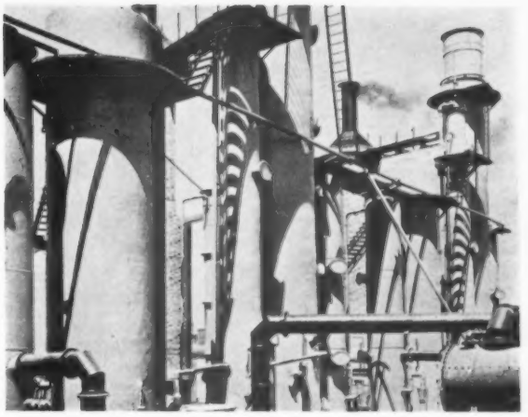
General view of the refinery situated at Batum



lubricating oils and the like, considerable effort is being directed toward increasing the country's cracking capacity. That these endeavors have been attended by considerable success is shown by the fact that total cracking capacity has been increased from 175,000 bbl. in 1928 to a value of 25,185,000 bbl. in 1932. Several English and American units are in operation as well as some Russian Kapelushnikoff vapor phase cracking units. Two of these latter units, having a capacity of 2,100,000 bbl. per year, are in operation at Baku. Cracking temperature is about 860 deg. Fahr. and the pressure 100 atm. The accompanying table gives the types of equipment and capacities of the various plants.

The maintenance of uniform production has been severely handicapped by frequent interruptions and shut downs, resulting from lack of equipment and repairs as well as lack of experienced operators. A large number of refineries have been affected by these troubles which have seriously reduced plant output in a majority of cases. Another factor which is affecting efficiency of plant operation is the fact that various experiments are being conducted on important pieces of equipment, such as overloading for long periods and extension of the working cycle before cleaning. This, of course, is bound to show up in decreased production.

Domestic machine shops are not yet ready to build the equipment necessary to produce high grade oil products at reasonable cost. Due to lack of funds, no equipment is being imported. This prohibition on equipment importation has caused havoc in plans and schedules.



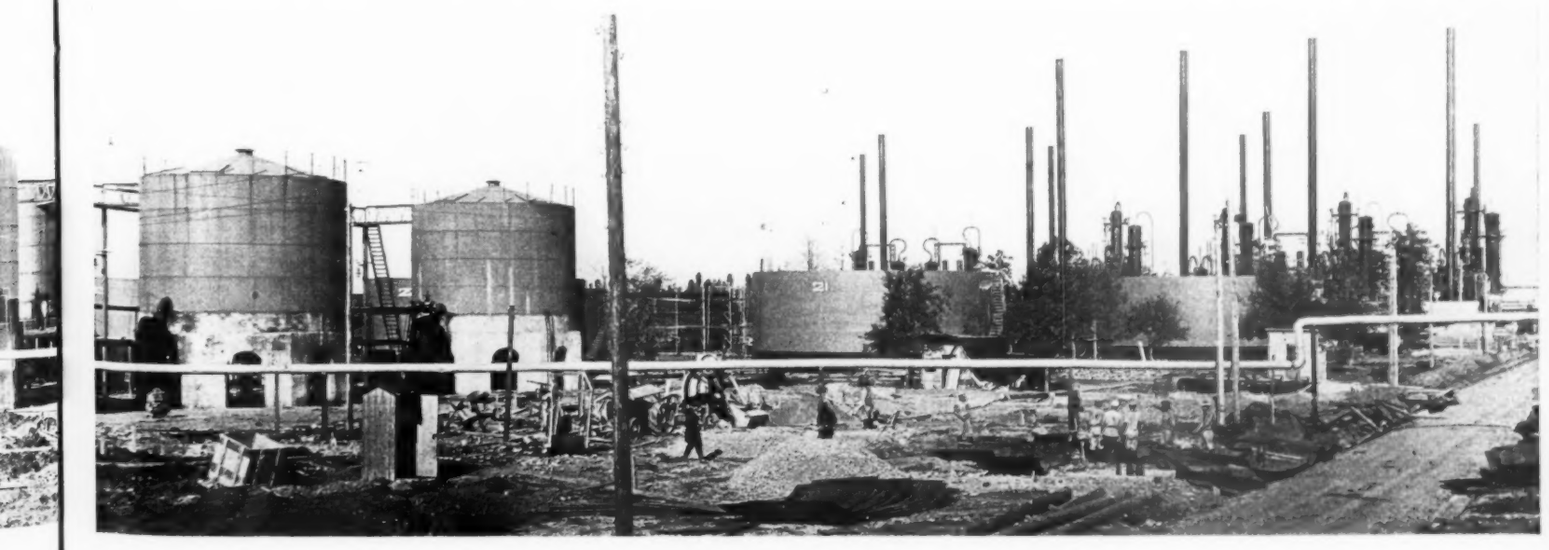
Refining unit at October Revolution plant consisting of a nine still battery.

Soviet Refining Capacity July 1, 1932 (Barrels per year)

Trust and Location	Straight Distillation	Lubricating Oil	Cracking	Remarks
Azneft-Baku				
	82,300,000			Capacity of plants in operation Jan. 1, 1931
	14,750,000			Ready to operate by July 1, 1932
	97,050,000	11,480,000		Operating Jan. 1, 1931
		700,000		2 Pengu Gurvitch units erected 1931
		11,200,000		to be in operation July 1, 1932
		23,380,000	875,000	2 Vickers units
			2,100,000	2 Kapelushniko units
			3,750,000	4 Winkler Koch units
			6,725,000	
Azneft-Batum				
	12,300,000			Operating Jan. 1, 1932
		1,400,000		1 Foster Wheeler unit
			3,750,000	4 Winkler-Koch units
			1,100,000	2 Jenkins units
			4,850,000	
	109,350,000	24,780,000	11,575,000	Trust Totals—by July 1, 1932
Grozneft-Grozni				
	47,270,000			In operation Jan. 1, 1931
	7,000,000			1 Badger unit
	5,600,000			2 Jorgenson units
	12,350,000			3 Foster-Wheeler units
	9,760,000			Additional Capacity of Maikop oil
	81,980,000	1,160,000		
			600,000	1 Jenkins unit
			650,000	1 Vickers unit
			7,600,000	7 Winkler-Koch units
			8,850,000	

Trust and Location	Straight Distillation	Lubricating Oil	Cracking	
Grozneft-Tuapse				
	10,640,000			In operation Jan. 1, 1932
			4,200,000	4 Winkler-Koch units
Grosneft-Maklach				
Kala	1,120,000			
	93,740,000	1,160,000	13,050,000	Trust Total—by July 1, 1932
Maikop-				
Krasnador	1,505,000			
	3,080,000			Pipe still completed in 1931
	4,585,000			Trust Total
Neftezarodi-				Plants of inner region
Varinsk				
Konstantinovka				
Yaroslavl	3,260,000			
Nizhni Norgorod				
Moscow			560,000	1 Winkler Koch unit built 1931 at Yaroslavl
Leningrad				
	3,260,000		560,000	Trust Total
Middle Asia-				
Santo Chimion	360,000			
	360,000			Trust Total
	211,495,000	25,940,000	25,185,000	Grand Total

Drawing crude from the Apheron peninsula, this is one of the Soviet's most important refineries.



Soviets' Congested Transportation System

Overloaded Railroads, Lack of Barges and an Inadequate Pipeline System Threatens to Hinder Progress in Other Branches of Soviet Petroleum Industry.

TRANSPORTATION is at the moment of vital importance to the completion of the plans outlined for the Soviet petroleum industry. A degree of success achieved in the construction and operation of refineries and in exploration and exploitation of petroleum resources can be and actually has been to some extent nullified by the failure of rail, water and pipeline transportation to keep pace with the other branches of the petroleum industry. Perhaps no other branch of the industry was as severely handicapped by lack of experienced personnel and inadequate equipment in 1921 as the oil transportation system in Russia. An 870 km. line from Baku to Batum, 350 km. of small diameter trunk lines, an inadequate supply of railroad tank cars, barges, the most recent of which were constructed in 1914, and two small tankers for the export trade constituted the material with which the Soviets began in 1921.

Pipelines in the Caucasus have attracted the best efforts of the Nefteprovodostroi (pipeline construction trust) and early in 1928 an important 10 in. crude line was completed between Grozni and Tuapse covering a distance of 618 km. and giving the Grozni fields a direct connection with the Black Sea. The completion of this pipeline has proved particularly useful in fulfilling the export program outlined by the Soviets. In 1930 a second 10 in. pipeline between Baku and Batum was completed supplementing the existing 8 in. line already in use on this route.

During the past year work progressed on the Armavir-Ukraine pipeline which was originally intended to extend from Grozni to Moscow by way of Armavir, Rostov, and Millerovo. However, the projected extension of the line from Millerovo to Moscow has been shelved for the present while more pressing problems of transportation claim the attention and limited resources of the Nefteprovodostroi. On April 20, 1932 the Armavir-Rostov section of the pipeline went into operation pumping refined petroleum delivered by railroad tankcar. The balance of the line—Grozni-Armavir should be completed in the near future.

Other pipeline projects at present claiming the attention of the Soviets are the two lines from the Emba fields to Samara and from the same starting point to Orsk. These lines may be said to be some distance in the future and await the ability of the Soviets to manufacture or purchase the necessary pipe. The Guriev-Orsk line will carry crude to feed the refinery that is to be built at Orsk. It will be 12 in. in diameter and over 700 km. in length having an estimated through-put of 1,500,000 tons per year.

Other lines included in the first (revised) Five Year Plan for the immediate future consist of a third line from Baku to Batum, a second line from Grozni to Tuapse and eventually a Caspian Sea-Moscow line. The aggregate length of these planned pipelines would exceed 5,000 km. (some 2,670 km. now in use) and would require almost 450,000 tons of steel pipe. The fact that Russia is not now in a position to furnish anything like this quantity of steel pipe indicates that there will be a temporary delay in the completion of the plans for pipeline construction resulting in additional strain on the already overworked rail and water transportation facilities.

Tankcars on the railroads also furnish an unsatisfactory picture in the Soviet Union at present. Over 2,500 cars are required during this year while only about 1,800 are available. Part of the railroad congestion in Russia is said to be due to inefficiency in dispatching trains.

Ocean going tankers have engaged the attention of the Soviets who have been reasonably successful in constructing these specialized ships considering the lack of material and experience in existence in 1921. By 1926 two reconstructed warships were launched having a capacity of 5200–5600 tons. Due to their extreme length in relation to the narrow beam these tankers—AZNEFT and GROZNEFT—proved unsatisfactory and are now being used in the Black Sea coasting trade. In 1928 the NAPHTHASYNDICATE and in 1929 the SOVIET NAPHTHA were launched from a French shipyard and have since proved most valuable in the export trade. Both ships are classed as 100 AI by Lloyd's. Equipped with two Sultzer, 1400 h.p. motors, they have a speed of 11 knots and a d.w.c. of 11,800 tons. In 1929–1930 the EMBANEFT and SOYUZ-GORNORABOTCHI were launched from the Marty yards at Nikolaoff on the Black Sea. Both these tankers also received Lloyd's highest rating. They are each equipped with two MAN 1400 h.p. motors giving them a speed of 10.4 knots; they each have a d.w.c. of 10,500 tons.

Future tanker plans include the manufacture of eight ocean going tankers within the next two years. Also six tankers for the coastal trade are to be built before the end of 1933.

According to A. M. Granoff, an official of the Soviet petroleum industry:

> Outlined Soviet tanker building program will meet only a small portion of the export trade requirements. With the rapid development of the Soviet oil industry and corresponding extension of oil exports the present system of chartering foreign tonnage for export trade will be continued for some time. U. S. S. R., therefore, will continue as an important customer on the world's freight market for some time.

The situation is covered briefly by the following statement in *Pravda*, No. 29, January 30, 1932, leading Soviet daily:

> The strained problem of transportation is the more complicated by the fact that the waterways are inadequately utilized owing to lack of means of transportation and insufficient building of all kinds of barge tankers to say nothing of lack of pipelines.

Soviet pipeline construct

Manufactured in U. S. S. R.

Podolsk Zavod, Former Locomotive Plant, Now Turning Out Refinery Equipment is Described by D. H. Chester, American Engineer, Recently Returned from Russia.

AN ACCOUNT of Mr. Chester's experiences in the Soviet's principal equipment manufacturing plant is reproduced in the pages of World Petroleum as a picture of the conditions under which the attempt is being made to terminate Russian dependence on Europe and the United States for supplies of refinery equipment. The importance of this policy and its bearing upon the realization of Soviet economic plans cannot be too highly emphasized. Mr. Chester's article portrays some of the difficulties encountered by the Russians in the manufacture of oil refinery equipment and may indicate to some extent the degree of success likely to be obtained in the domestic manufacture of machinery heretofore purchased abroad.

A JOURNEY of 45 kilometers south of Moscow will bring you to the town of Podolsk on the small river Pakhra. You will know Podolsk by the bright red railroad station, the flock of crows in the nearby trees and the goats and geese that are beachcombing the station platform. In detraining you will be forcibly assisted by the crowd behind you. Most of these people will be laden with bags and bundles of all kinds. Pause a few moments and you will see another crowd boarding the train also loaded down with bags and bundles. A large portion of this shifting population represents labor turn-over. An inquiry as to the population of Podolsk brings answers varying from 15,000 to 50,000. It's doubtful if any one knows, as it changes from day to day.

The first institution one sees is the Singer Sewing Machine Zavod, once the daughter of an American parent, now the stepchild of the U. S. S. R. This plant manufactures sewing machines and carries a side line of war munitions. In other directions one sees a metallurgical works, cement plant, stone quarry, lime kiln and a new modern bakery.

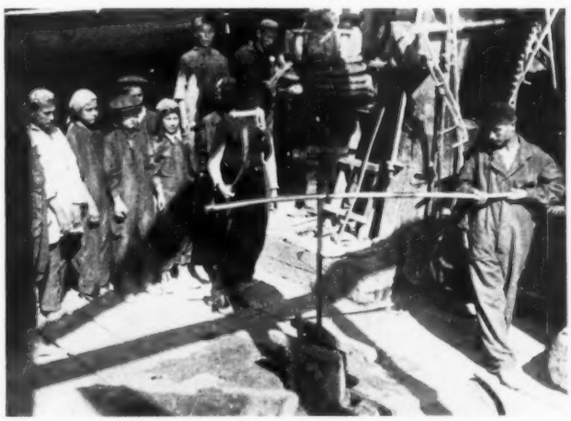
Way out on the edge of the town is a very long red brick building surrounded by numerous smaller buildings both inside and outside of the high fence that encloses the factory proper. This is the Zavod Paroremont, a factory that repaired railway locomotives in the old days. It has been taken over by the U. S. S. R. and converted into a plant for the fabrication of oil refinery equipment. This is a typical Russian plant or Zavod in that it not only operates the main factory but controls the living quarters, restaurant, hospital, schools, etc. In fact it is a town in itself. Each of the other local industries is similarly organized and as they are some distance apart they give the appearance of a number of small towns. Around each factory and back into the country are numerous peasant villages, each consisting of about 20 log cabins.

The plant under consideration consists of a main factory building covering about 10 acres and several smaller buildings. These are all of typical Russian design, constructed of red brick and with surprisingly thick walls. They are mostly one story structures and are poorly lighted due to the scarcity of windows and soap. Two old slow moving cranes serve the shop while another crane of the same type is being installed in an extension about completed.

In the dim past some one sold Russia the idea of the narrow guage, hand operated, industrial railway. This plant is no exception as the tracks run up one side of the shop, down the other, crosswise, into nooks and corners, and do not stop at the factory door but extend along the sides of the buildings and out into the yard. The total mileage makes quite a showing, particularly when you add the temporary trackage used on construction work.

The plant proper consists of about 100 acres. At the main entrance gate is police headquarters, a two story brick building. Just inside the gate are the administrative buildings, some of brick and some of log construction. A white brick chemical and physical laboratory is being completed and is the most modern structure of the group to date. The housing facilities consist of 12 new brick apartment buildings of 8 to 30 apartments each, temporary barracks, and log cabins. One family to the room is standard practice although a few of the important workers get a more liberal allotment of space. Many of the 3500 employes

In school and in the field; young Russians learning drilling fundamentals.



are peasants who live in the back country and walk four and five kilometers to work.

On May 1, 1931, the writer received an invitation to attend the laying of the cornerstone to the new factory addition. The shop band was out; a stand was in place for the speakers; and there was enthusiasm everywhere. Many speeches were made and the day was considered a complete success. This is to be the latest thing in the way of a modern Russian machine shop. It is 600 ft. by 300 ft. of reinforced concrete and white brick construction. The original plans were drawn by a foreign architect; but local conditions have necessitated changes. As planned, it calls for an abundance of light and liberal tool spacing.

Work on this building started with a rush. Gangs of laborers began foundation excavations with shovel and wheelbarrow. The bulletin boards soon announced that the quota was being exceeded. Later, work slowed up due to the scarcity of labor and materials. The schedule called for 300 carloads of building material per month whereas only about 30 arrived. Rains caused the excavations to cave in. They worried along this way until December when winter terminated outdoor work. At this time about 70 percent of the foundation was in place and the wall up some 15 ft. on the front, while at the back the excavation was not completed. Practically all construction work is done by hand. A small straight shovel is used; lumber is whipsawed by hand. Material is transported to and from the work either with the inevitable industrial railway, by a one horse truck or with a wheelbarrow. Words will not describe this latter conveyance. It has a small steel wheel, a large wooden box and two handles. If you treat it kindly it will stand up; but if left alone it will lie down on its side. Provoke it and it will roll over on its back. The one horse truck has a capacity of 200 bricks or a corresponding amount of other material.

Estimates show that the excavated material as well as the building material is handled from four to five times before it reaches its final resting place. It is useless to ask why they do not use a steam shovel, and truck away the waste material for you know the answer will be, "We have no steam shovel or motor trucks now; but we will make them later on." Concrete is mixed with a modern concrete mixer located in a temporary building at one end of the work and enjoys a ride on the industrial railway to its permanent home. For elevated positions a ramp is constructed and the amount of lumber required would almost build the plant.

With all these handicaps they actually do put up buildings and lots of them. As an example, about midsummer the factory restaurant burned to the ground. A temporary frame building was put up over night and far enough completed to serve breakfast the following morning.

To fabricate oil refinery equipment on the scale planned of course requires machine tools, and plenty of them, as well as competent operators. The old machine tools that came with the plant would justify a museum rating. Many of the machine tools that came with the plant are eligible for Henry Ford's mechanical museum. They were collected from every country manufacturing machine tools and date back to the early machine age. Here you will find drill presses that come so near drilling a square hole you almost believe it and lathes that turn shapes you cannot name. Much of this machinery would be useless in the hands of a skilled mechanic, so you do not have to over-work your imagination to surmise what is happening with inexperienced operators.

There is a brighter side, however, as they have ordered machine tools right and left, principally from Germany and England. This new equipment is good. It includes planes, radial drills, punches, shears, bending rolls, straightening rolls, electric riveters, bulldozers, pipe bending machines, presses and almost every conceivable machine except a number of small and very necessary tools. Some of the planes, radial drills, and shears have been installed and operated. Other machines have been installed for months and have not been operated. The bulk of these new tools are stored in the yard in their original crates awaiting completion of the new shop. They are very proud of these new machine tools, and rightly so. In the hands of skilled workmen, they would help to create a greater shortage of materials than now exists in Russia.

Piece work and bonuses have helped to solve some of the quantity problems but not the quality problem. You can pick out the piece work laborer at a glance and confirm your selection by looking at samples of his work.

Women work alongside of the men not only in the shop but everywhere. It is not an uncommon sight to see a woman using a spade, carrying bricks up a ladder, manipulating a wheelbarrow or pushing the industrial railway car. They have equal rights with men and they don't let the men forget it. They serve on committees, attend meetings, march in processions and have a faculty for calling a conference on the slightest occasion.

Even with women, boys, and girls drafted into the working army, the question of labor is a serious one both from the quantity and quality standpoints. Everywhere you go, you hear of labor shortage and everyone seems to be working. It is not so much the shortage of labor as the inefficiency. If their labor standard was up to that of the United States there would be unemployment, unless they contrived to bring forth a five year plan every twelve months. It is true that there is practically no idleness, for if you won't work you don't eat. The food book in this respect has almost worked miracles.

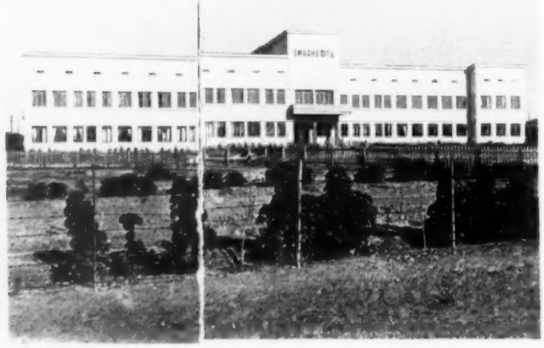
The quality of the output can not be regulated so easily, and it is here that the food book plays a minor part. They are greatly interested in modern methods and tools but putting them into practice is another story. They cling to the old methods with a tenacity that is hardly believable. New imported machinery is handled with gloves for it is a very serious offense to damage these machines and consequently they play safe at the expense of output. The lack of skilled instructors to direct shows up in most of the finished products. It is quite apparent in the riveting and welding and many of the machine operations are anything but good. You cannot make a machinist out of a peasant regardless of the quality of the equipment you give him. He is accustomed to a one horse plow, a cradle and a flail.

Following the standard Russian practice this shop has a training school where some 150 boys and girls, for half of each day, are being instructed in the rudiments of machine shop work. The balance of the day they attend the shop school. In due time they undoubtedly will have a much better class of mechanics.

As far as possible they are using steel and other material made in Russia. Owing to the limited amount available a large quantity is purchased abroad. Very little non-ferrous metal and practically no alloy steel is used in the fabrication of oil refining equipment. They stick to steel simply because it costs less. Nevertheless they will spend several rubles in labor to save one ruble worth of steel.

Petroleum institute at Baku pre-revolution building adapted to Soviet's advanced techniqu

Petroleum institute of the Embaneft: example of a building devoted to all important research which is to form the basis for a huge industry.



Most of the towers, evaporators, separators, heat exchangers and similar equipment, that are now being fabricated, are direct copies or modified designs of American equipment. Russian designs are being prepared but they bear the earmarks of the U. S. A.

The problem of operating equipment manufacturing shops is a serious one. The management consists of a general director, chief engineer, manager, assistant managers, and a corp of engineers. The place is literally cluttered with titles. With all of this titled personnel it is little wonder that orders take on a change in complexion in passing down the line. Everyone down to the actual workman is allowed to express his opinion, even to the extent of calling a conference to press his point. These conferences are going on constantly and take a surprising amount of time. The workers have been inculcated with the idea that the shops and factories are theirs, and that they have a perfect right both to express their opinion and to do the work in the manner in which they see fit. In some extreme cases the workers have actually discharged the director.

A liquid-liquid heat exchanger 18 ft. long and 2 ft. in diameter with about 200 sq. ft. of heating surface and designed to operate at a fluid pressure of from 50 to 100 lb. per sq. in. presents a good example of the type of work produced. Six months were spent on this job, which could have been completed by experienced workers in any up-to-date shop in 30 days. The exchanger contained 18 circular baffles and one longitudinal baffle. Instead of using a templet for drilling the tube holes, each one of the baffle plates was marked out and drilled separately, with the result that when the element was completed it would not go in the shell. The tubes were subjected to such severe strains in being expanded into the tube sheets that many of them were no sooner in place than it was found that they leaked and would have to be replaced. When the unit was finally pronounced completed it was found that the repeated insertion and removal of the heating element had so bent the exchanger shell that there was a clearance of about 3/16 in. between the edge of the baffle plate and the shell, which extended several feet into the interior.

All of these influences operate to make scheduled production a virtual impossibility. Paroremont was scheduled to turn out 12 complete cracking units last year. Three of these attained the semblance of completion, and only when they are put into operation will it be possible to tell whether or not they were actually completed. This year's schedule of 60 units has been cut to an amazingly small number.

Through it all there is enthusiasm. Pep meetings to urge the men on are a frequent occurrence. The shop newspaper does its share and the wall newspaper tells the laggard where he gets off. Radio loud speakers scattered through the shop do not let them forget what they are working for. It is amazing the confidence most of the people have in the future. They are putting up with privations that would start a riot in almost any other country.

Notwithstanding all these handicaps, the fact remains the U.S.S.R. is building equipment for oil refineries, pipe lines, field work and in fact for all branches of the oil industry. Their plans for the future as put down in figures are enough to make even Einstein gasp. Whether or not they have started something they cannot finish only the future will tell.

▼

U.S.S.R. Machinery Import Requirements

Domestic Manufacture Unlikely to Keep Pace with Development of Soviet Petroleum Industry Necessitating Imports from Countries Willing to Make Suitable Credit Arrangements.

By L. M. Mooratoff

It is generally known, that owing to the rapid development of the Soviet oil industry, the Soviet Union has succeeded in securing the second place among the oil-producing countries of the world.

The immense potentialities of the oil industry and the special attention which is being paid by the Soviet Government to the investment of capital in the oil business, have rendered it possible to plan further rapid development of this branch of Soviet industry in the next two years—1932 and 1933.

The steady increase of capital investments during the years 1927 to 1930 will be seen in the accompanying table.

In 1931 estimated capital investments in the oil industry amounted to 421,000,000 rbls. Such heavy capital outlay during the last few years has enabled the Soviet industry to erect and put into exploitation a large number of important units in the oil fields.

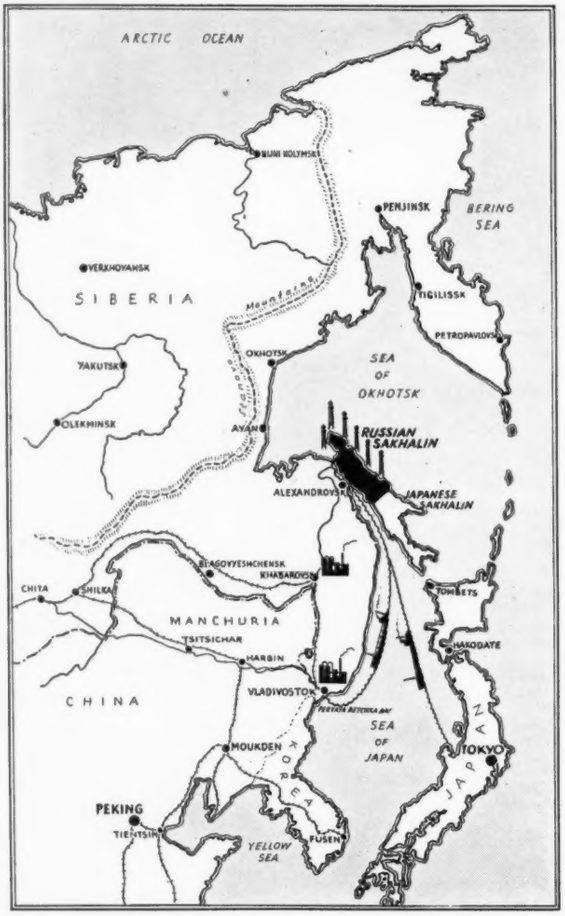
Capital Investment in Soviet Oil Industry

	1926-27	1927-28	1928-29	1929-30
Total amount invested, in million rbls.	174	201	211	316
Comparison with 1926-27 percent	100	115.6	121.5	181.6
Increase as against the preceding year percent	...	+15.6	+5.9	+49.7

In the next few years it is intended to put up a large number of cracking and pipe-still plants and an appropriate number of lubricating oil refinery departments and rerunning stills. In accordance therewith capital expenditure on power plants, such as boilers of various types, steam engines, motors, etc., will also be increasing. The cost of equipment for pumping oil and gas (pumps, compressors, etc.), of electric equipment such as turbo-generators, electric aggregates, etc., of drilling equipment, together with the plant and tools for oil well exploitation to be provided will amount to scores of millions of roubles. Over and above this it has been decided to lay several trunk pipe-lines.

At the present time a large part of the equipment for the oil fields and refineries is already being successfully manufactured by engineering works in the U.S.S.R. and, in particular, by the works under control of the Soviet oil industry.

The specific nature and great variety of machinery required in the oil business have led to the formation of a special oil machine-building trust, called the "Neftemash." This trust is controlled by the oil industry (see chart), its object being to manufacture drilling tools and refinery equipment. The trust has a working capital of 14,000,000 rbls. and consists of six engineering works in Baku, one in Grozny and one in Tuapse.



Sakhalin Island from which Soviets hope to supply a large share of the Far Eastern market.

As previously mentioned, a large part of the oil equipment formerly purchased abroad, *i.e.*, in the United States, Germany and England, is now manufactured in U.S.S.R., such as rotary drilling rigs and all the accessories thereto, cracking and pipe-still plant, alloys for bit facing, electric drilling equipment, reductors, etc.

The output of the Neftemash trust is rapidly increasing and with the contemplated increase of its capital, the output will henceforth grow still more rapidly. And yet the "Neftemash" will not be able to keep pace with the rapid developments of the oil industry in the course of the next few years and to satisfy all the requirements of the Soviet Union in oil equipment.

Accordingly, notwithstanding the expansion of equipment works in U.S.S.R. manufacturing plant and tools for the oil industry, the demand for imported equipment will be steadily increasing.

Moreover, certain parts of the refining equipment now being manufactured in the Soviet Union will still have to be acquired abroad for several years to come.

Thus the very development of oil machinery construction in U.S.S.R. will to a certain extent stimulate imports of foreign equipment production into Russia.

Such imported equipment as drilling and pumping aggregates as well as power and refinery plant, will in future be widely employed in the Soviet oil industry, part of this equipment having already been tested and recognized as suitable for working conditions in the Soviet oil fields.

It is regrettable that some of the foreign companies do not realize the importance of the prospects of trade with the Soviet Union in oil machinery. This chiefly applies to American companies, who frequently quote terms and dates of delivery absolutely unsuitable for the Soviet oil industry.

Foreign manufacturing companies must adopt more elastic business methods in their trade with U.S.S.R. Prices, payment and time of delivery must be adjusted to the interests of the customer and consumer. The considerable demand on the part of the Soviet oil industry for foreign plant and equipment must serve as a sound basis for the further development and strengthening of business relations.

We would refer to the experience of the German manufacturers who have already succeeded in finding a way to reconcile their interests with those of their Soviet customers. The immediate result of this was that several important contracts have recently been signed between prominent German companies and Soviet organizations. This fact is an illustration of the great possibilities which are open to business people in trade with the Soviet Union.

It should be remembered that high prices and unfavorable terms of payment are not likely to develop export trade with Russia. Whenever such terms are quoted, the buyer naturally seeks out other markets where conditions are more suitable for placing his orders. Although American manufacturers undoubtedly have experience in the manufacture of oil machinery and supply machinery of a quality superior to any in the world, this consideration cannot be the sole determining factor.

Should suitable prices be quoted and fair terms of payment be offered large business could certainly be secured and foreign plant could be widely applied in the Soviet oil industry.

The total cost of oil equipment, imported into the Soviet Union from 1927 to 1930 amounted to 130,000,000 rbl. ($67,000,000) of which 30,000,000 rbls. were spent in 1929/30. In 1931 this figure was exceeded.

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ESTHONIA has one of the highest gasoline import taxes in the world, namely 20 cents per Imperial gallon. It was imposed partly to encourage domestic shale oil production.

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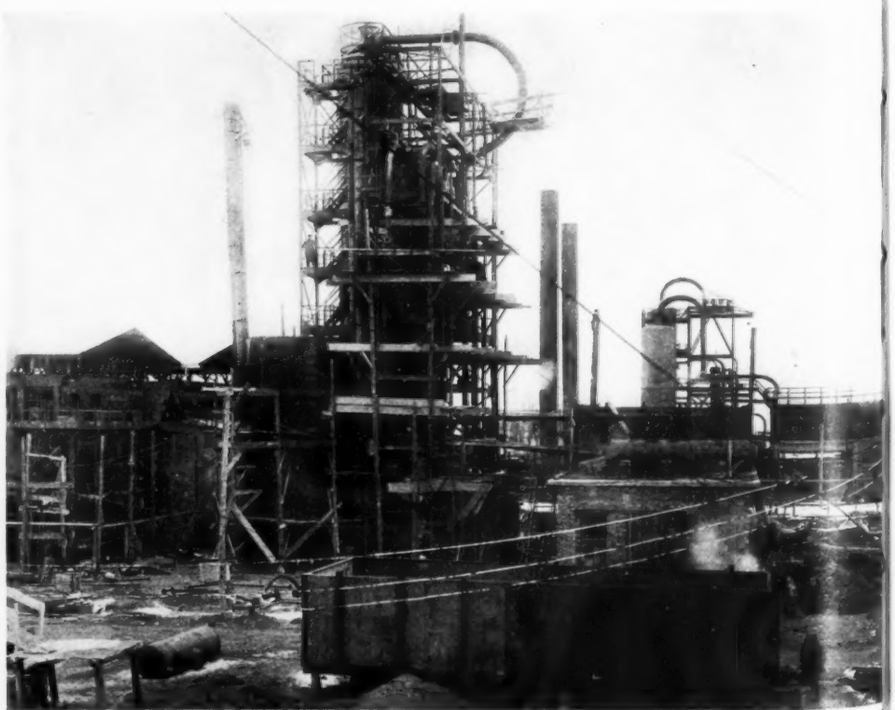
The fuel oil for the British Mediterranean fleet will be supplied by Astra-Romana and other Roumanian companies, states a report emanating from Vienna.

Alco unit under construction in Russia representing the fruits of a foreign purchasing policy that is receiving the Soviets' most careful consideration.



rowing Soviet Consumption May Curtail Exports

Industrialization of U.S.S.R. Inducing Huge Increase and Changing Character of Domestic Consumption May Help Restrain Soviet Invasion of Foreign Markets.

P. A. VOLKOFF, distinguished economist of the Soviet petroleum industry, in the accompanying article outlines the tremendous growth in internal consumption of petroleum products in the U.S.S.R. and throws some light on a subject of paramount importance to the international petroleum industry. With the continued industrialization of Russia at an accelerated tempo the problem of increasing petroleum exports from that country at the rate that has prevailed during the past few years presents a problem of increasing difficulty and the solution of which assumes a decreasing importance to the Soviets. If the consumption of petroleum products in the Soviet Union is presenting ever more insistent demands while exports continue to meet the same difficulties it seems probable that at least part of the pressure of Soviet supplies will be removed from the world market. Internal demand for petroleum products, resulting from industrialization of the country and mechanization of agriculture, is just beginning to make itself felt as a factor in the balance of production available for export.

INDUSTRIALIZATION of the Soviet Union has caused an immense growth in consumption of petroleum products from 5,923,000 tons in 1913 to 12,546,000 tons in 1931. The outstanding feature of the growth in consumption since the formation of the Soviet Union has been the growing ratio of white products. By the end of 1932 prewar consumption will be exceeded by over 170 percent; but at the same time the increase in the consumption of white products will amount to approximately 600 percent.

Mechanization of agriculture and industry has increased the demand for white products. In 1913 fuel oil consumption amounted to 81.5 percent of the total. Beginning 1925/26 the ratio of fuel oil consumption to the total began to decline and by 1932 the ratio of fuel oil consumed will be 59 percent of the total consumption. During the past winter the demand for these light products outstripped production so that it was necessary at times to curb the supply of kerosene for illuminating purposes by rationing out supplies. Several of the revisions of the production quota of the Five Year Plan were caused by the growing demand for internal supplies.

The tractorization of agriculture has played no small part in the increased demand for petroleum products. Introduction of tractors is considered of great importance in accomplishing the collectivization of individual farms. Page 274, part 1, second book of the "Five Year Plan on National Economies of Soviet Russia" states,

"Increased tractorization of agriculture is one of the most important media through which to solve the social problem which is set for the Five Year Plan and the other plans which are to follow. Social readjustment of agriculture will not be possible without its tractorization."

Efforts to accomplish this end will result in a probable 235,000 tractors in use in Russia by the end of 1932. These tractors with a capacity of 3,500,000 h.p. compare most favorably with the 78,500 tractors with a capacity of 1,000,000 h.p. in use January 1, 1931. A large number of the tractors to be put into use in Russia during 1932 will be of domestic manufacture, tractor plants in U.S.S.R. having a capacity of 1,900,000 h.p. on Jan. 1, 1932.

Soviet Tractor Output

Plants	1932	1936
Krasni Putilov	6,000	13,600
Stalingrad	61,000	50,000
Kharkoft		50,000
Chehiabinsk		40,000
	67,000	153,600

Converted into capacity 153,600 tractors have 4,380,000 h.p. and in accordance with the plans the tractors in use in 1937 will have a capacity of over 12,000,000 h.p.

Tractor building forms 20 percent of Russia's machine industry and employed 75,000 laborers in 1930. The tractors in use in 1937 will require almost 20,000,000 tons of motor fuel.

A second big factor in increasing the total consumption of petroleum products in Russia and changing the character of this consumption has been the vast increase in the use of automobiles and trucks. By the end of 1932 the Soviets plan to have 120,000 units in operation compared with the 30,000 units in 1930 and the 50,000 units in 1931. Between the beginning of 1931 and the end of 1932 the number of domestically manufactured motor cars in use is expected to increase from one percent to 50 percent. In 1930 only 3,000 motor cars were built in Russia; in 1931, 20,000 were built, and during 1932, 49,000 units are expected to be built.

Automobile Output 1932

Plant	Number	Type
Moscow	20,000	passenger cars
Yaroslav	2,000	heavy trucks
Nijin Novgorod	27,000	passenger cars and light trucks.

By 1935 the capacity of the Moscow plant will have been increased to 70,000 units, the Yaroslav plant to 3,000 cars, and the Nijin plant will have a capacity of 200,000 cars in 1937. In addition to this large planned increase in capacity of existing plants two more automobile manufacturing plants will be built in 1935 and 1936 bringing the capacity up to 400,000 per annum. By 1937 over 1,200,000 automobiles are expected to be in use in Russia.

A third direction in which consumption of Soviet petroleum products will increase is aviation, already an important consumer although still in its infancy. Motor fuel requirements for airplanes are likely to make qualitative as well as quantitative demands on petroleum production.

Consumption of all white products in Russia for all purposes including aviation will amount to approximately 28,000,000 tons by the end of the Second Five Year

(Continued on page 212)

Foreign Oil Legion

T. C. Burns, Wolburn Petroleum Company.

W. O. BALANZETEQUI has taken up his new duties as general manager of The Texas Company (W.I.) Ltd. Mr. Balanzetequi was recently transferred from Porto Rico.

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L. A. SCOTCHMERE, formerly general manager of The Texas Company (W.I.) Ltd. has been transferred to Shanghai, China.

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CARL T. NEWCOMB, general manager, Richmond Petroleum Company, Maracaibo, Venezuela, has returned to California, after having virtually closed the company's Venezuelan field office.

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K. MCKELVEY of the British Controlled Oil Company has been transferred to Guayaquil, Ecuador, after six years in Venezuela.

▼

FRANK JONES, until recently with B. P. Ltd. in Belfast, has been appointed manager of marketing for Shell Mex and B. P. Ltd. in that well-known Irish city.

▼

W. CHALMERS BURNS, formerly vice-president and director in charge of sales of the Richfield Oil Corporation of New York, was recently elected to a newly-created position in the company, namely, executive vice-president.

T. Rieber, vice-president, The Texas Company.

JEAN BOROTRA, the well known French tennis player, has been elected a director of Avery-Hardoll, Limited, the company recently formed by W. and T. Avery Limited of Birmingham, England and the Société Anonyme pour Tous Appareillages of Paris, manufacturers of the Hardoll gasoline pump. Maurice Duflos has been appointed managing director.

R. Ogarrio, vice-president, The Texas Company.

DR. A. R. ANDREWS, formerly with the Royal Dutch-Shell Group, has been appointed Director of the School of Mines at Dunedin, New Zealand, and Professor of Mining at Otago University.

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J. ROMANES, of A. Beeby Thompson and Partners, the London consulting geologists and engineers, is visiting the petroleum area in Hanover, Germany.

▼

F. MELVILLE, refinery superintendent of Trinidad Leaseholds, Limited, is in England on leave.

▼

ROBERT HAMILTON TRENCH, a director of British Burmah Petroleum Company and Salay Oil Lands, Limited, has returned to England from a visit to Burmah.

J. Elmer Thomas, petroleum economist.

C. H. LIEB, president of the Standard Oil Company of Venezuela and vice-president of the Creole Petroleum Corporation, has been appointed president of the Carter Oil Company, a subsidiary of the Standard Oil Company (N. J.) with headquarters at Tulsa, Oklahoma.

▼

HOWLAND BANCROFT has been selected as a director of the newly formed Bitumes Ebano of France. This company, recently organized with a capital of Fr. 1,000,000, owns a number of plants for the manufacture and storage of asphalt in France.

▼

H. E. LINAM, superintendent of production in the Quiriquire field, Standard Oil Company of Venezuela has been promoted to the position of acting manager.

▼

GEORGES BOURGEOIS, chairman and managing director, of the Compagnie Industrielle Maritime, Havre, France, has been made Commander of the Order of the Légion d'Honneur. His company has a large oil storage farm at Havre and business showed a steady gain last year.

▼

R. O. ARMSTRONG, formerly a field superintendent with Royalite in Canada now is located with the Tropical Oil Company at El Centro, Colombia.

▼

HAROLD MOORE, a director of Bolgar Oil Processes, Limited, has been in Roumania on the business of his firm, Moore and George, petroleum consultants of London.

▼

J. CUTHILL, works manager of the Oil Well Engineering Company, London, is now in Mexico, and will subsequently visit Trinidad.

J. Z. Lar... president Oi...

Tide Water Sets Fast Pace In Industry's Modernization Program

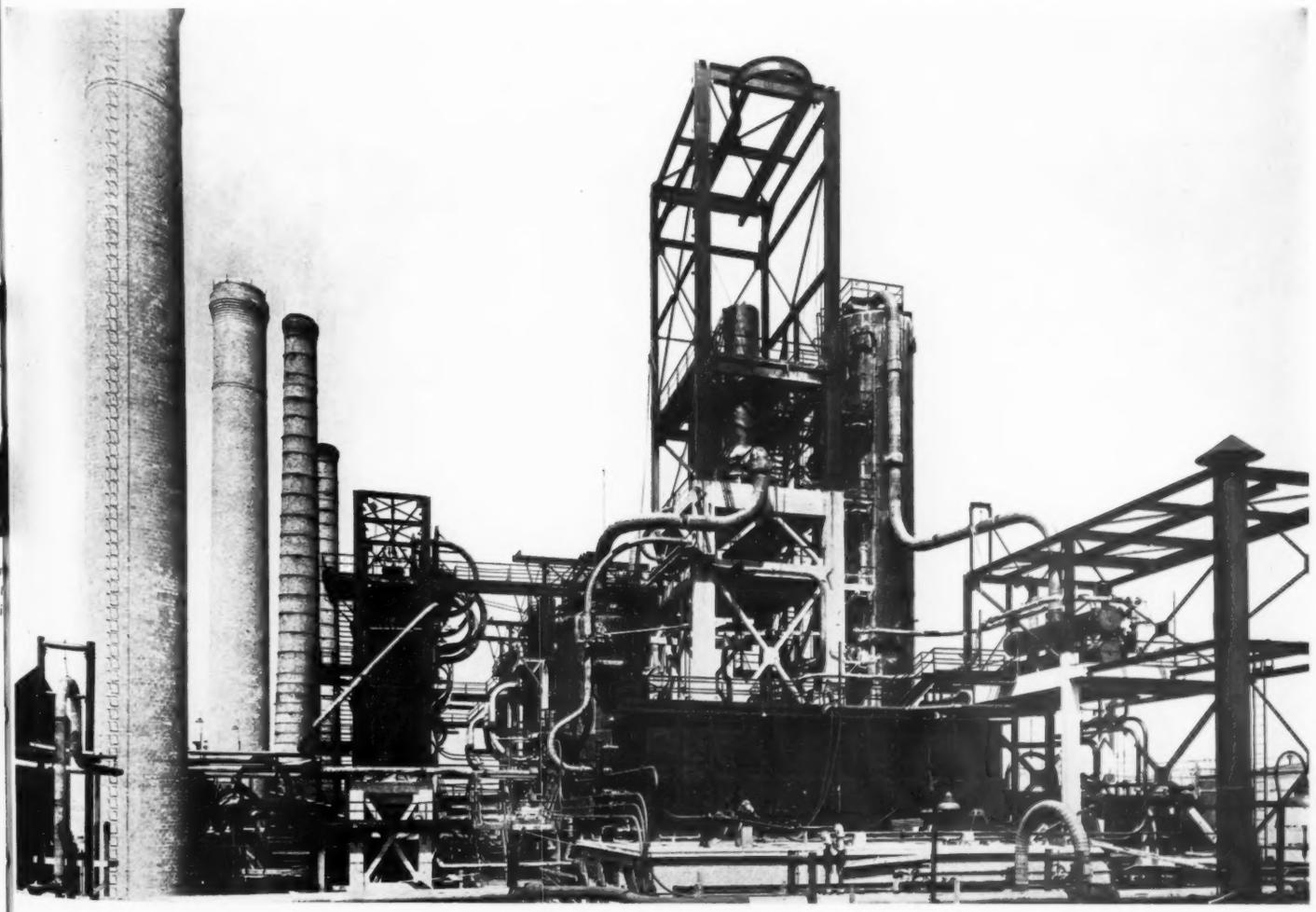
New 10,000 bbl. Tube and Tank Cracking Unit Installed at Bayonne Refinery to Increase Production of High Anti-Knock Motor Fuel.

By Joel H. Hirsch

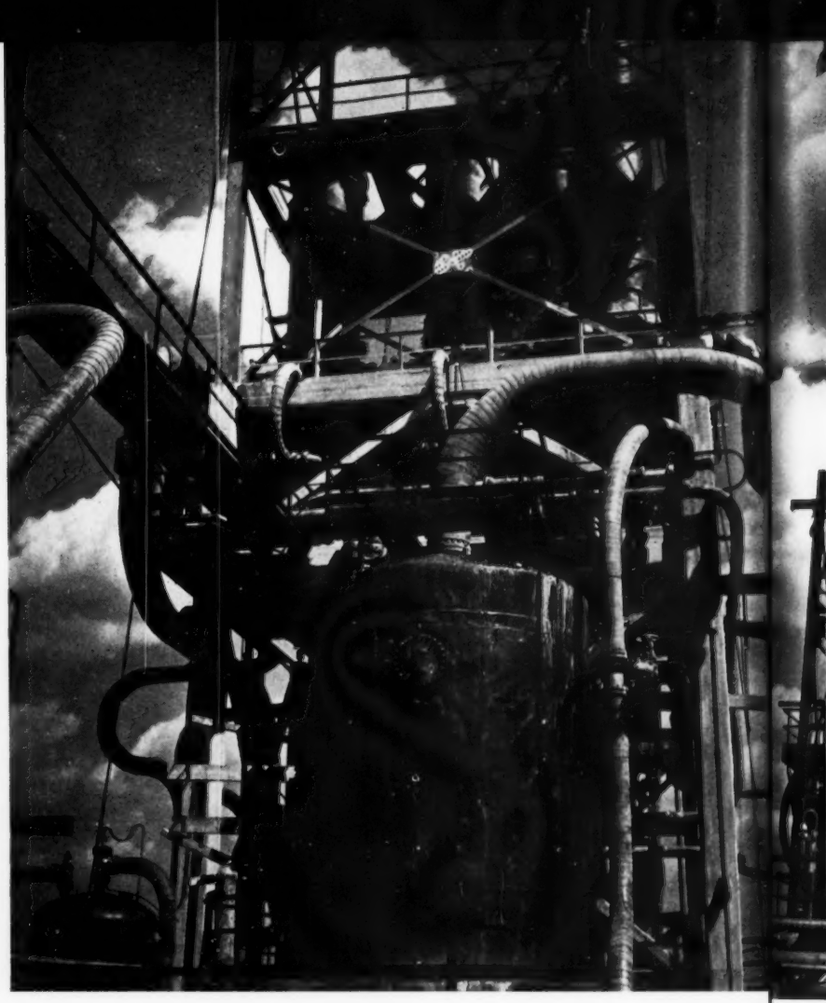
STRIKING evidence that the major factors in the refining industry realize the necessity for modernization, and have confidence in the future, is presented by Tide Water Oil Company's new 10,000 bbl. per day "Tube and Tank" cracking unit, which recently went into operation at the Bayonne, N. J. plant, and will increase greatly the high anti-knock gasoline production of that 50,000 bbl. per day refinery. An interesting sidelight, and one fraught with considerable significance, is the fact that this new unit has been built on about one quarter of the ground formerly occupied by 30 Burton shell stills, and 20 Burton tube type stills. Although the last of this obsolescent apparatus ceased operation in 1927, it is worthy of note that it is being torn down and replaced by new and up-to-date equipment, at a time when industry in general has driven itself to the conclusion that curtailment of even the most necessary maintenance and improvement expenditures is paramount.

Designed by Tide Water's engineering department and constructed by The Lummus Company, this new unit, embodying the foremost principles of modern engineering design and fabrication, is capable of a daily production of 6,000 bbl. of 75 octane number motor fuel. Two cracking coils, discharging into a common secondary system, make it possible to operate with a wide range of flexibility as to selection of charging stocks.

Among the novel features are a bubble tower, 93 ft. high and 12 ft. in diameter, fabricated at the Barberton, Ohio plant of Babcock and Wilcox Company and said to be the largest tower ever shipped in one piece by rail; two cracking coils having radiant sections on the front, bridgewall, sidewalls, and roof, instead of on the roof section alone, as is the conventional practice; and two Worthington gas-engine driven hot oil pumps.



Source of Tide Water's high anti-knock motor fuel.



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Heat exchangers
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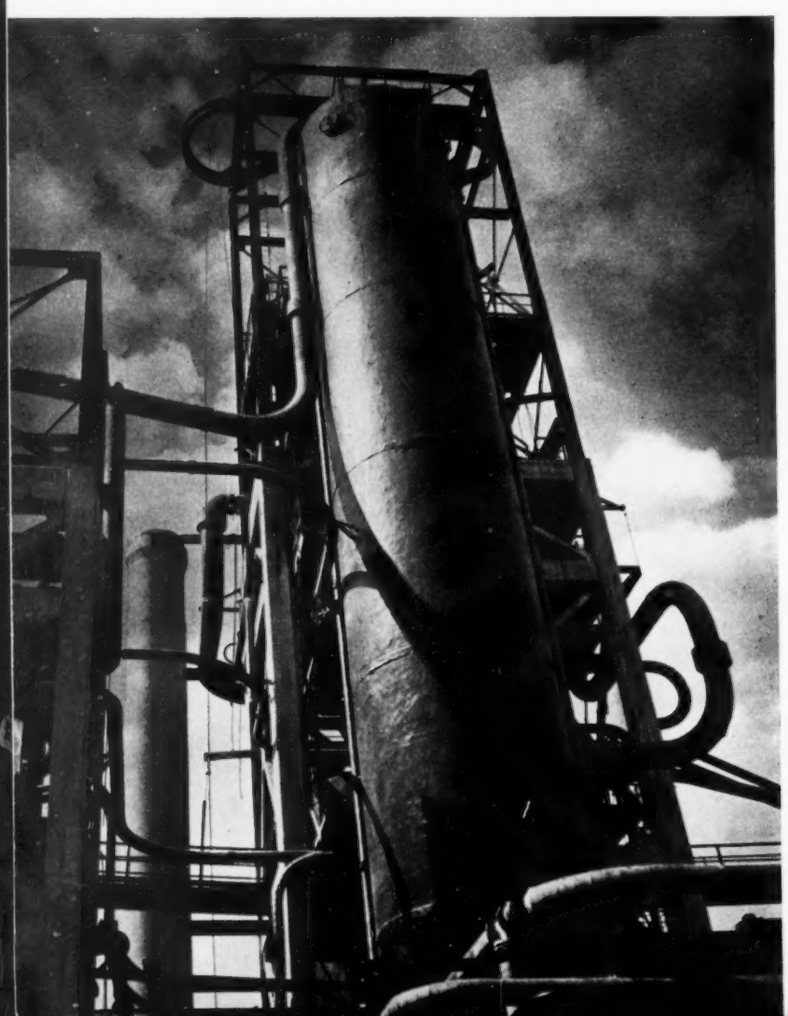
The combined fractionating column and gas oil accumulator, constructed of 1¼ in. steel plate and weighing over 380,000 lb. has fusion welded joints throughout, all of which have been X-ray tested to insure perfection. The completed bubble tower was heat treated for strain relief. The column, which is designed to operate at 100 lb. per sq. in. pressure, contains 25 bubble trays, 20 of which are in the enriching section and five in the stripping section. The tower is so arranged that light oil side cuts may be taken from any one of five plates near the top.

The cracking coils are constructed so that approximately 60 percent of each unit's 5,000 sq. ft. of heating surface is in the radiant section. The tubes are four inches in diameter, those in the convection and sidewall sections being of ordinary mild steel, while those in the front, bridgewall, and roof sections are of Nirosta KA2S, iron-chromium-nickel, alloy steel. With the coils operating at outlet temperatures of 925 to 975 deg. Fahr. and pressures of from 1,000 to 1,500 lb. per sq. in. the need for alloy steel is apparent.

These tube furnaces are heated with refinery gas, each furnace being equipped with 12 burners, six on a side, using about 1,250,000 cu. ft. of gas per day, at a pressure of 65 lb. per sq. in., and providing a heat input of about 40,000,000 B.T.U. per hour. It is estimated that roughly 50 percent of the heating load of the system will be carried by the coils, the balance being obtained by means of heat exchange equipment. Primary combustion air enters at the top of each burner through an aspirating device, which operates on the Venturi meter principle, mixes with the gas in a special chamber, and passes to the combustion section, where it meets the secondary air, which has come in from the other side of the furnace and has been preheated by passing under the floor. This is done not so much for heat economy as to preserve the furnace floor. The stack gases leave the convection section at a temperature of 900 deg. Fahr., no stack economizers being installed.



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Bubble tower
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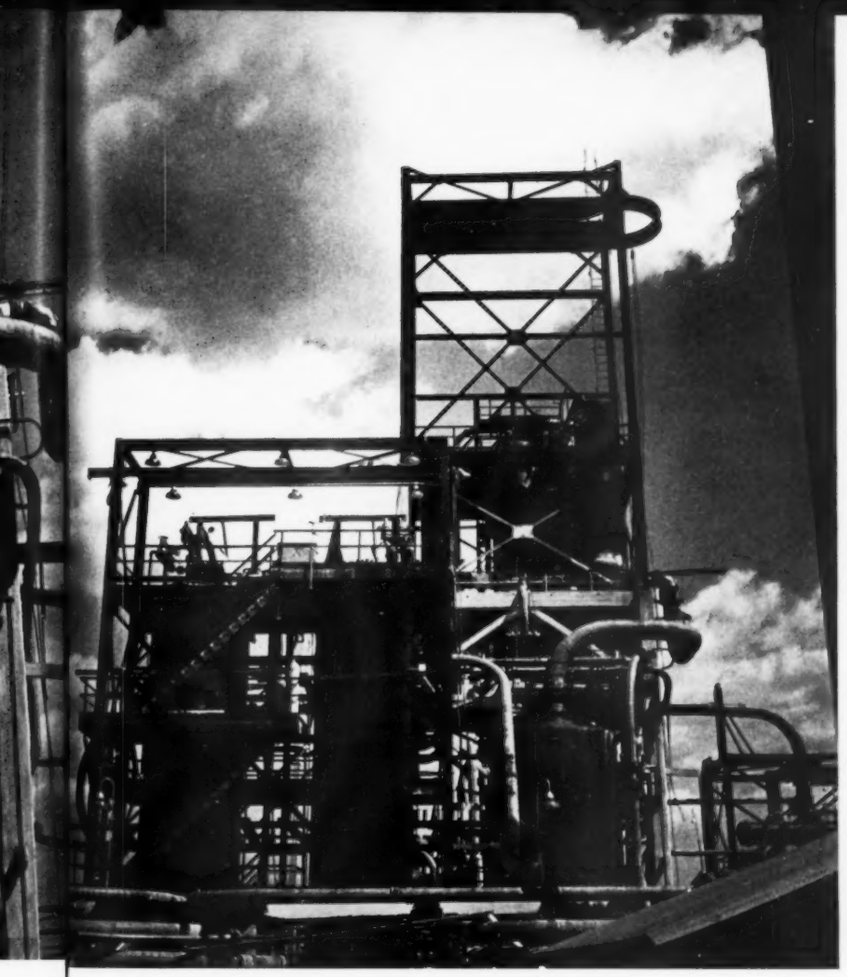
Central control devices and temperature and pressure recording instruments in the control house make it possible for the operators to maintain optimum conditions at all times.

Crank and fly-wheel hot oil pumps, driven by 450 h.p. single tandem, double acting, four cycle gas engines, supply the oil circulation to the heaters. This pumping combination, having a high overall efficiency, is designed to supply 26,000 gal. per hr. at a pump discharge pressure of 1,500 lb. per sq. in.

The driving engines, having a 20 in. bore and 30 in. stroke, operate at 140 r.p.m. and drive the pumps by means of a herringbone reduction gear at a speed of 45 r.p.m. The engines are equipped with water cooled jackets, exhaust valves, pistons, and piston rods. Compressed air is used for starting. The exhaust



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Reaction chambers
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gases pass through such an efficient muffle system that the sound of the explosion is only faintly perceptible. The ignition system consists of four spark plugs for each cylinder and receives its current from a motor generator set and auxiliary storage batteries fed by the refinery power line. Designed to use 10,000 B.T.U. per h.p. hr., each engine will require hourly 3,000 cu. ft. of 1,500 B.T.U. refinery gas. Hydrogen sulphide is removed from the combustion gas by scrubbing with lye solution, while the air for combustion is passed through air filters.

Operating at a discharge pressure of 1,500 lb. and a return pressure of 100 lb. per sq. in., the hot oil plunger pumps handle gas oil from the accumulator section of the fractionating tower at a temperature of about 600 deg. Fahr. The pumps have a 5½ in. bore and a 30 in. stroke. Valves, valve seats, and springs are of stainless steel. A moving telescopic tube supplies cooling water for the plunger at all parts of the stroke.

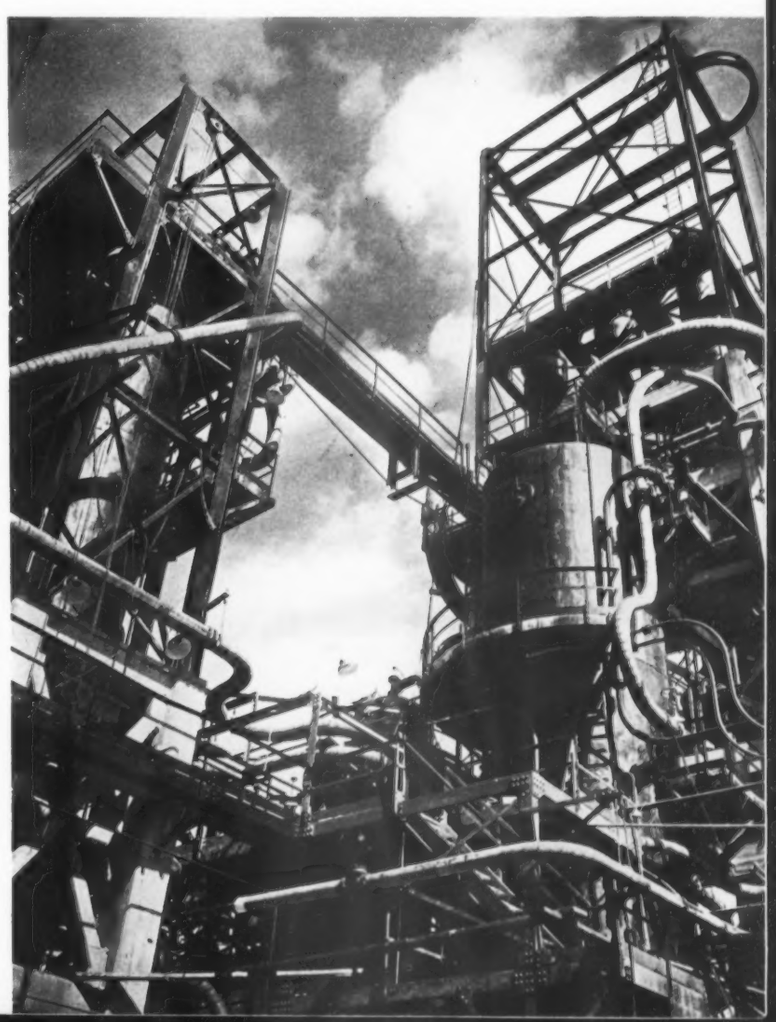
To minimize fire hazards, the pumps and engines are housed in a concrete roofed building with brick walls and steel frame, with the engines in a central room, separated from the hot pump rooms by nine in. brick walls.

Gas oil of the following specifications is used as charging stock in the cracking process: gr. 28 to 45 deg. API, Sulphur 0.40 percent maximum pour point −15 deg. Fahr. to +20 deg. Fahr.

The feed enters the cracking system through a steel shell and tube vapor-liquid heat exchanger, used as part of the condenser system, for bubble tower distillate vapors. The heated feed from the exchanger enters the fractionating column near the bottom where the light ends are flashed and pass out of the accumulator section into the tower where it combines with the pressure distillate vapor and light oil side cuts. The balance of the stock is discharged into the cracking zone by the hot oil pumps mentioned above.

The discharge from the pumps passes to a high pressure heat exchanger bank. The first unit in this bank, receiving the hot vapors direct from the separator, is a special heat exchanger built by The Lummus Company, embodying Elesco tube bends and connections and having special provisions for accessibility in cleaning and the elimination of expansion stresses due to high temperatures. The other two units are of the conventional type. All three are designed for 1,500 lb. per sq. in. fluid pressure and 150 lb. per sq. in. vapor pressure. These sections, serving as partial condensers for the vapors leaving the vapor separator, are so manifolded that they may be cut in and out of the process to provide any one of several heating and condensing surfaces. The present plan is to send the hot charging stock through the Lummus exchanger and then into the gas oil tube heater.

The heated cracking stock enters the soaking drums at a temperature of about



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Vapor separator
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950 deg. Fahr. and a pressure of 1,000 lb. per sq. in. Forged from single steel billets, weighing 460,000 lb. each, the two soaking drums were extruded to 48 ft. overall length and an outside diameter of 70 in. with 7 in. thick walls. High pressure valves and 4 in. double extra heavy seamless steel ring joints are used on the manifold on the high pressure side of the reaction chambers. In the interest of safety, ball check valves have been placed on the inlet side of the chambers. A rotary drilling set has been installed for the removal of any coke formed. The chambers are remotely controlled by a rod and gear mechanism, which is manually operated from the control house.

On leaving the soaking drums the pressure is released from 1,000 to 100 lb. per sq. in. Reaction products pass through a 14 in. main to the vapor separator at a temperature of 720 deg. Fahr., where the low boiling material is flashed and passes up into the vapor section of the heat exchange-partial condensers. Part of the condensate from the exchangers and all of the vapor passes to the lower section of the bubble tower.

The remainder of the partial condensate returns as reflux to the vapor separator, where this liquid in conjunction with virgin gas oil, is used as an additional wash to keep particles of tar and coke from being carried over into the vapor sections of the heat exchangers. Constructed of 1⅜ in. steel plate, 45 ft. high and 11 ft. in diameter, the separator contains one bubble tray and four baffle plates near the top to help protect the exchangers from tar and coke. Finally, to remedy further the coke and tar carrying propensity of the vapor stream and to minimize their production, cold tar is recycled from a subsequent process to the base of the separator.

Returning again to the vapor separator and partial condenser streams entering the lower section of the bubble tower, it may be said that the major portion of them pass overhead through a 12 in. main into the vapor sections of the oil feed heat exchangers, through the coils of a submerged gasoline condenser and salt water cooler into the pressure distillate receiving tank. From this point it is either pumped back for tower reflux or allowed to flow under its own pressure to storage. The fixed gases, taken off between the submerged condenser and the cooler, are sent through another salt water cooler and finally to the refinery fuel system. A 10 ft. by 6 ft. fusion welded steel cylinder, fabricated by Babcock and Wilcox, comprises the pressure distillate receiver. The reflux is handled by two dual drive centrifugal pumps using either explosion proof electric motors or steam turbines. Again, for safety reasons the pumps and motors are separated by a brick wall.

F. W. Keebler, Tide Water Superintendent of Processes

Light oil side cuts from the fractionating column pass either into the light oil accumulator or through a submerged condenser into a naphtha receiving tank, similar to the pressure distillate receiver previously described.

This cracking unit may be used to reform light oil or naphtha to produce high anti-knock gasoline, in which case the charge passes through a feed heat exchanger-condenser unit to the 30 ft. by 10 ft. light oil accumulator tank. The light oil hot charging pumps take the stock from the accumulator, force it through the high pressure heat exchangers to the light oil pipe heater. The stock leaves the heater and passes into its own reaction chamber, from which it is relieved into the vapor separator. From this point the two processes run in unison.

In the control house are recording instruments for measurement of stream quantities, temperatures, and pressures.

Orifice meters are used to measure the amount of total feed to the tube heaters, reflux to the fractionating column, vapor separator, and the amount of gas fed to the cracking coil burners. A Venturi meter is used to measure the amount of incoming feed to the cracking unit, while the gasoline and naphtha are measured with displacement meters.

Temperatures are measured at the points in the system, indicated in the accompanying table, by means of Micromax recording pyrometers:

Temperature Measuring Points

1. heater inlet
2. heater outlet
3. top of soaker
4. separator vapor pipe
5. top of bubble tower
6. feed entering column
7. column side cuts
8. light oil accumulator

Pressure Measuring Points

1. fresh feed
2. all vessels
3. hot oil pump discharge
4. tar pump, discharge and return
5. reflux pumps
6. burner gas system.

In addition to the safety measures already mentioned, a number of other steps have been taken to prevent accidents. All buildings are provided with double exits; platforms are extra wide; and supports in the tube heaters are heavily insulated.

Because of the size of the principal pieces of equipment and the distance over which some of it was transported, notably the bubble tower which traveled over 500 miles in one piece, the construction of this unit has been the subject of much interested observation. The wide flexibility of operating conditions coupled with the high inlet pressure would seem to indicate that the operation of this installation will be watched with as much interest as was displayed in its erection.

Tidewa new u

Growing Soviet Consumption

(Continued from page 207)

Plan (1937). Exclusive of fuel oil the total consumption of petroleum products in 1937 in the Soviet Union will be about 35,000,000 to 40,000,000 tons.

The effect of this increasing consumption on the quantity of petroleum products available for export is obvious. In spite of statements to the effect that oil is exported from U. S. S. R. at the expense of the domestic consumer, this has not been the case according to L. G. Zammel of the Soyuznefteexport who maintains that the development of internal consumption and exports have followed parallel courses.

For the future it seems probable that internal demand will grow far more rapidly than it has in the past while production may not increase with sufficient rapidity to supply the internal market and a growing export demand.

It is well to bear in mind, however, the great importance of exports of a readily marketable product like petroleum, to a nation in the position of Russia. Imports of equipment and machinery necessary for the industrialization of the Soviet Union depend on exports of natural resources and a few manufactured products. During the second Piatiletka the balance between exports and consumption will be of the utmost importance to the success of the Soviet's economic plans.

U.S.S.R. Consumption of Petroleum Products
(In 1000 Tons)

Year	Diesel Oil	Fuel Oil	Total Dark Products	Gasoline	Ligroin	Kerosene	Lube Oil	Other	Total
1913	..	..	4820	36	..	830	147	90	5923
1923/24	290	2613	2903	30	..	381	61	100	3475
1924/25	401	3386	3787	45	..	575	87	136	4630
1925/26	552	3693	4245	64	..	859	119	191	5478
1926/27	607	3862	4469	77	..	1018	135	222	5921
1927/28	672	4490	5169	98	..	1190	161	250	6861
1928/29	778	4848	5626	133	4	1571	212	306	7852
1930	960	6308	7268	243	122	2190	324	424	10571
1931	1184	7225	8409	435	214	2608	404	476	12546
1932*	1400	8000	9400	870	335	3865	612	842	15924

*First (revised) Five Year Plan.

United States

	Daily Production bbl.	Daily Runs to Stills bbl.	Gasoline Stocks bbl.	IMPORTS FOR WEEK Total bbl.	IMPORTS FOR WEEK Gasoline bbl.
Week Ending Mar. 26	2,163,050	2,176,000	46,726,000	1,868,000	158,000
	327,750*				
Week Ending Apr. 2	2,154,000	2,198,000	46,519,000	4,321,000	662,000
	331,050*				
Week Ending Apr. 9	2,226,500	2,293,000	47,171,000	2,342,000	484,000
	337,600*				
Week Ending Apr. 16	2,181,650	2,273,000	46,733,000	1,764,000	152,000
	343,450				
Week Ending Apr. 23	2,267,900	2,258,000	47,285,000	3,334,000	370,000
	346,350				

Underlined figures indicate improvement in statistical position—decrease in production, runs to stills, gasoline stocks or imports.

* Production of the Rusk-Gregg field, East Texas.

Tax Bill

THE bitterly contested and greatly altered tax bill to raise additional revenue for the Federal Government in order that it may balance its budget for the fiscal year 1933 has passed the House of Representatives and is now before the Senate. It is practically certain that some features of the bill will be changed and consequently in its present form the bill is tentative in its character. On April 18, Secretary of the Treasury, Ogden Mills, sent to the Senate the Administration's proposed tax program differing in several important particulars from that passed by the House of Representatives. Secretary recommends a Federal gasoline tax of three-fourth of a cent per gallon.

Proposed Petroleum Taxation

	Treasury Revised Yield Estimate	Ways and Means Committee Revised Yield Estimate
Lubricating Oil (4 cents per gallon)	35,000,000	35,000,000
Imported gasoline, fuel oil, etc. (1 cent per gallon)	5,000,000	25,000,000
Oil transported by pipe line (8 percent of charge)	20,000,000	20,000,000
	$60,000,000	$80,000,000

Directors of the American Petroleum Institute in a meeting held in New York City on April 11, while agreeing with the imperative need of a balanced Federal budget, opposed with determination the special excise levies directed against lubricating oil and oil transported through pipe lines. The directors, at the same time, indicated their readiness to accept, together with other industries, a manufacturers' sales tax. The levy on oil transported by pipe lines drew especial criticism, since some estimates indicate that 82 percent of the proposed tax will fall on three States, Texas, California and Oklahoma.

The import tax on petroleum products was also protested by oil exporting countries, particularly by Mexico.

Imports

PENDING the imposition of tariff on imported petroleum products the importing companies began heavy tanker movements to United States. In the week ending April 2, 4,321,000 bbl. were imported, double the average weekly imports; while currently it was reported that Huasteca, Aguila, Transcontinental and Sinclair companies exported some 2,000,000 bbl. from their Mexican storage.

Proration—Texas

AS reported in the preceding issue of WORLD PETROLEUM, the Texas Railroad Commission obtained from Federal Judge Randolph Bryant of Sherman, on March 7, a counter-injunction preventing some six companies from producing more oil than was prescribed in Commission's allowables. The six concerned companies attempted to have the above temporary counter-injunction dissolved, but on April 16 Federal Judge Bryant confirmed his previous opinion as follows:

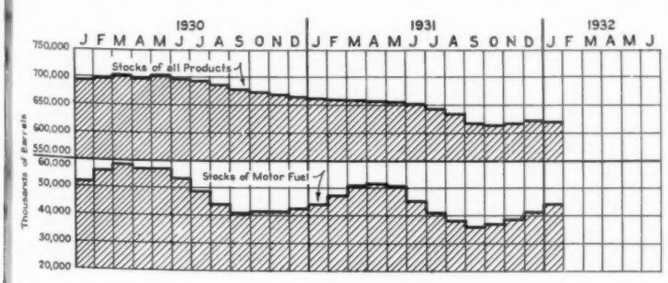
"I do not feel like taking the personal responsibility of disturbing conditions in the East Texas field at this time, pending the outcome of the three-judge court decision on May 30, but at the same time I do not desire to deprive plaintiffs nor the court of the right to accumulate evidence."

Proration—Oklahoma

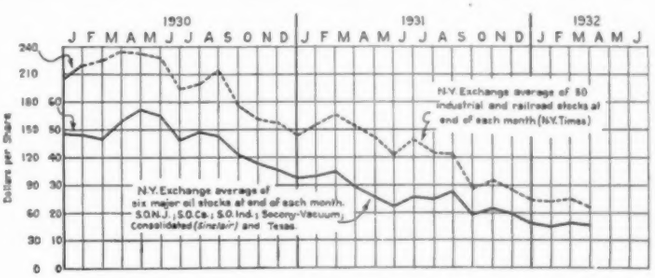
DECISION in Champlin Refining Company vs. Oklahoma Corporation Commission case argued last month before the United States Supreme Court is expected early in May.

In the meanwhile the multitude of opinions not only between those in favor of proration and those opposed to it, but even between proponents of proration themselves as to the enforcement methods was suddenly brought to the attention of the industry in the Wilcox Oil and Gas Company fight against the Corporation Commission. Ray M. Collins, State Umpire, stated that the Wilcox Oil and Gas Company had transported 699,356 bbl. of oil in excess of its own allowable and also in excess of the allowable of wells to which it had pipe line connections in the last five-months period. Accordingly the State Corporation Commission issued a cease order against the Wilcox Oil andGas Company, but the latter continued to transport crude oil by tank cars, after the Magnolia Petroleum Company (S.O.N.Y.) and the Empire Oil Company refused to buy, or transport, the oil overproduced by the Wilcox Oil and Gas Company, while the Frisco Railroad took the attitude that the Commission had no authority over the railroads. The case was brought before District Judge R. P. Hill, whose decision was adverse to the request of the State Corporation Commission, the Judge dissolving the order restraining the Wilcox Oil and Gas Company from producing and running oil in the Oklahoma City field. This decision, contrary to the point of view taken by Federal Judge R. Bryant in a similar case in the State of Texas, made the return of martial law ruling in Oklahoma City field very probable, Governor W. Murray taking the matter under consideration. The officials

Relation of stocks of all petroleum products to gasoline stocks.



Six major oil stocks in relation to 50 industrial stocks on the New York Stock Exchange.



of the Wilcox Oil and Gas Company explained that they favor proration "if properly and fairly administered" (?), but still the resulting unsettled situation served to weaken the refinery market in Oklahoma, forcing some of the U. S. motor, 58–60, gasoline down one-quarter of a cent per gallon by the end of April.

Proration—California

IN the past several weeks there has been a continuous partial break-down in the proration in the State of California, production of that State holding considerably above the maximum figures set by the General Committee, and in the week ending April 16 rising to 518,000 bbl. per day. Los Angeles Basin fields, Long Beach, Santa Fe Springs, Dominguez and Playa del Rey, have been the primary offenders. In some respects the forced production of the fields in the Los Angeles Basin is not as bad an influence as it appears at first glance. As a matter of fact this larger output has been resulting in rapidly declining potentials, and the time may not be very far away, when the Los Angeles Basin fields will be entirely eliminated as an overproduction threat.

On the other hand, the Kettleman Hills and the Elwood Terrace fields are under full control.

Public Lands

ON April 4 Secretary Wilbur of the Department of Interior reopened 180,000,000 acres of public lands for oil prospecting. These lands were withdrawn from development by President Hoover on March 13, 1929, as a measure of conservation.

The reopening is conditional upon unit operation in discovered fields. Secretary Wilbur stated in the formal announcement:

"The unit operation of the oil pools offers the most substantial realizable basis yet developed for constructive handling of oil conservation. Experience in unit operation in Kettleman Hills and in other public land areas where oil and gas are being developed has demonstrated its feasibility and the importance of making it a requisite in the resumption of prospecting on the public domain."

The order allows 60 days preference for those who previously had filed on public lands, prior to March 13, 1929, to reapply for same permits under the new conditions.

The reopening affects primarily the Rocky Mountain district, and renewed activity will be first manifested in eastern portion of the States, Colorado and New Mexico.

Supply and Demand

DOMESTIC consumption of motor fuel in February, 1932, averaged 880,000 bbl. per day, against 930,000 bbl. per day in February, 1931, indicating a 5.5. percent decline. Exports of motor fuel dropped 24.0 percent in the same period, resulting in a net decline in demand for motor fuel of 7.6 percent.

Runs to refineries started on the upgrade, averaging 2,293,000 bbl. per day (A. P. I.) for the week ending April 9, an increase of 100,000 bbl. per day over the previous week.

Due to extensive use of cracking equipment the yield of gasoline increased to 46 percent of the charged stock, the highest recovery on record.

On February 29 the total motor fuel stocks, at refineries, terminals and in transit, reached 61,964,000 bbl., a 63 days' supply, representing an increase of 4,602,000 bbl., and four days' added supply, since January 31 (Bureau of Mines).

World Oil Production—Official Figures

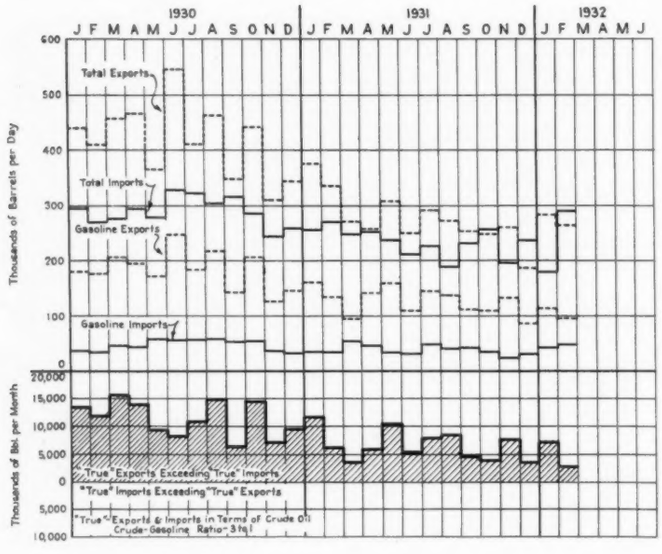
All figures furnished direct to WORLD PETROLEUM by Governments, except where otherwise specified

(Figures in U. S. barrels—Conversion ratio 7 bbl. = 1 ton)

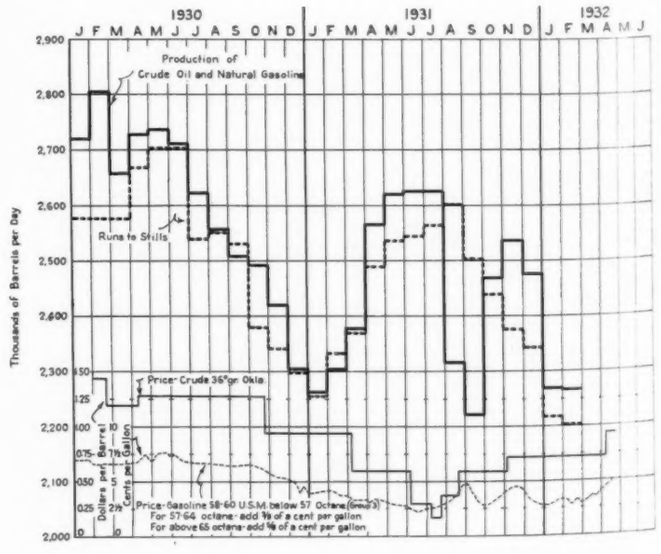
Country	Total 1931	Daily Av. 1931	January 1932	February 1932	March 1932	Daily Av. 1932
United States	850,275,000	2,329,521	66,884,000	62,484,000	67,770,000[3]	2,165,000
Russia	156,342,900	428,957	13,059,900	12,194,000	13,852,300	430,000
Venezuela	120,069,462	328,337	9,939,027	9,469,873	10,398,514	327,900
Roumania	46,333,945	123,510	3,780,000	3,750,000[1]	3,750,000	124,000
Persia[2]	40,149,977	126,942	3,228,780	2,834,090	3,516,611	105,200
Mexico	33,038,853	90,517	2,869,177	2,761,064	2,967,842	94,400
Dutch East Indies	32,818,346	89,913	3,943,147	3,652,432	2,844,065	114,700
Colombia	18,237,190	49,965	1,533,969	1,401,554	1,668,699	50,550
Argentina	11,713,049	32,091	1,116,800	1,040,000	1,192,700	36,800
Peru	10,102,116	26,722	945,150	750,930	514,569	24,300
Trinidad	9,753,792	32,086	846,878	828,860	874,145	28,000
British India	7,830,101	21,452	700,000[1]	700,000[1]	700,000	23,100
Poland	4,397,760	9,146	351,365	324,100	334,495	10,000
Sarawak	3,338,472	12,049	210,784	200,102	197,050	6,680
Japan and Taiwan[1]	1,884,285	5,135	195,000	195,000	195,000	6,430
Egypt	1,845,938	5,057	138,796	137,431	142,275	4,600
Ecuador	1,750,633	4,796	126,406	111,361	126,024	3,990
Canada	1,583,339	4,338	96,912	90,841	97,484	3,135
Germany (incl. Thuringia)	1,778,602	4,873	148,197	150,197[4]	262,528	6,160
Iraq[1]	1,200,000	3,290	100,000	100,000	100,000	3,295
France	512,862	1,405	46,000[1]	46,000[1]	46,000[1]	1,515
Sakhalin (Russian)			Included with Russia			
Sakhalin (Japanese)			Included with Japan			
Others[1]	338,700	928	36,000	36,000	36,000	1,185
	1,355,295,322	3,713,138	110,296,288	103,257,835	111,486,301	3,571,000

[1] Estimate. [2] Anglo-Persian Oil Co. figures revised; fuel oil returned to the ground has been deducted.
[3] A. P. I. [4] No production in Thuringia January 13 to March 10.

Total petroleum exports in relation to imports; gasoline imports and exports; and true exports exceeding true imports.


1930
1931
1932
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J
Total Exports
Total Imports
Gasoline Exports
Gasoline Imports
Thousands of Barrels per Day
"True" Exports Exceeding "True" Imports
"True" Imports Exceeding "True" Exports
"True" Exports & Imports in Terms of Crude Oil
Crude-Gasoline Ratio-3 to 1
Thousands of Bbl. per Month

Production of crude and natural gasoline and runs to stills in relation to crude oil and gasoline prices.


1930
1931
1932
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J
Production of
Crude Oil and Natural Gasoline
Runs to Stills
Thousands of Barrels per Day
Price-Crude 36° or Okla.
Dollars per Barrel
Cents per Gallon
Price-Gasoline 58-60 U.S.M. below 57 Octane (Group 3)
For 57-64 octane-add ⅛ of a cent per gallon
For above 65 octane-add ¼ of a cent per gallon

Prices

REFINERY gasoline prices recovered rapidly during the first half of April under the stimulus of higher crude oil prices. Quotations on April 18 were 5-5¼ cents per gallon for 58–60 U.S.M., 57 octane rating, in Group 3 (Oklahoma) market; 57 to 64 octane rating gasoline, U.S.M., commanded 5¼–5½ cents per gallon and 65 and above octane rating grade, U.S.M., was quoted at 5½–5¾ cents per gallon. Gulf Coast prices for export were increased to 5 cents per gallon for 58–60 U.S.M.

Natural gasolines increased in sympathy, being quoted at 2¼–2½ cents per gallon for grade 26–70 (former AA).

The increase in crude oil prices initiated by the Continental Oil Company on March 23, to be effective April 1, was met by all purchasers by April 14. The advance was quite unpopular with several of the major companies. W. S. Farish, president of the Humble Oil and Refining Company (S.O.N.J.) protested against the price increase in a statement quoted on page 184 in this issue.

Standard Oil Company of Indiana proved to be the decisive factor when it met the advance on April 11, its raise being followed in rapid succession by Gulf Oil Company, Humble Oil and Refining Company and the Shell Oil Corporation. The Standard Oil Company of Indiana, through R. S. Ellison, president of the Stanolind Crude Oil Purchasing Company, deplored the price advance which they considered unwarrented by gasoline prices in a statement outlining their reasons for meeting an advance which might be considered premature.

Rusk—Gregg—East Texas

IN conformity with the Texas Railroad Commission's order establishing maximum allowable production for the East Texas field at 325,000 bbl. per day, the per well allowance was reduced to 71 bbl. per day during the first half of April, and to 67 bbl. per day for the second half of the month. At the current rate of completions the per well allowances will be cut to 56 bbl. per day on June 1, to 51 bbl. per day on July 1 and to 46 bbl. per day on August 1.

Magnolia, East Texas Refining Company, Humble, Shell, The Texas and the Empire companies voluntarily reduced their own production and their purchases from other wells to 62 bbl. per well per day effective April 19. One reason suggested for this action is the increased importation of petroleum resulting from efforts to land shipments before the import tax proposal now before the Senate becomes effective.

At the close of April there were in the Rusk-Gregg field 5,200 producing wells, while locations and completions increased from the previous average of about 80 per week to around 150 per week. The cumulative recovery from the field reached 145,500,000 bbl. by May 1, or an equivalent of 1,322 bbl. per acre of its proven area, now definitely limited to 110,000 acres.

The rate of new locations has been greatly accelerated, reaching 177 for the week ending April 13, by the desire of the operators to produce as much oil as possible while wells are flowing, the recently observed drop in bottom-hole pressures being of considerable proportions. Another contributory factor has been the reduction of drilling costs by the contractors, currently drilling being done in East Texas at $1.60 per foot, or from $6,500 to $7,500 for a completed well, not including derrick and equipment.

All wells in the East Texas field will have to be converted into pumpers at some future date, probably by the Spring of 1934, and the market thus to be created for pumping equipment will be of enormous proportions. Fully 8,000 wells will have to be equipped with pumping jacks, rods and some type of power. A large part of this equipment will be purchased new.

South Texas

THE Mirando-Laredo district of South Texas was extended in several directions during the past month. Two shallow gas wells, opening two new fields, were completed in the northwestern portion of Duval County, while in Starr County, a few miles from the Mexican boundary, a 150 bbl. well was completed at 1,368–1,382 ft., near Rio Grande City, extending southward this general shallow area, and probably assuring its further extension into Mexico. While the Mirando-Laredo district is of secondary importance at this time, accounting for about 17,000 bbl. per day, its future possibilities are very promising. Deeper drilling may very well uncover major oil accumulations, while even its shallow potentialities are barely touched.

Gulf Coast—Texas

ON December 13, 1931, G. W. Strake et al. No. 1 South Texas Development Company, a rank wildcat well in Montgomery County, due north from Houston, was brought in as a gas well from a total depth of 4,991 ft., estimated at between 15,000,000 and 20,000,000 cu. ft. of wet gas, under 1,525 lbs. pressure through a ¼-inch choke. This well marked the first commercial production in Montgomery County. Upon completion the well was reported making between 100 and 200 bbl. of high gravity condensate per day.

In March, 1932, the Humble Oil and Refining Company (S.O.N.J.) became interested in the new development and purchased a considerable interest in the block of leases, obligating itself and the Strake Oil Company to drill four additional tests, two of which are now being drilled by the latter. This transaction, covering about 4,400 acres, calls for payment to the Strake Oil Company of $500,000 cash and of $3,500,000 out of first quarter of the oil produced. The Strake Oil Company still retains about 3,000 acres.

Early in April, 1932, Heep Oil Corporation No. 1 Cartwright, 1¼ miles due northeast from the discovery well, was reported as showing for a producer from 4,956 to 5,053 ft., also making, as yet unmeasured volume of wet gas under pressure in excess of 1,000 lbs.

These two gas producers are of much more than passing interest and importance, being in the area due north from the salt domes and due south from the Mexia-Powell and Rusk-Gregg Woodbine sand fields. The Montgomery County development possibly opens for active wildcatting the almost indefinitely large expanse of South Texas, situated but 50 to 75 miles from the existing refineries and tanker ports of the Gulf Coast.

New Prices

Oklahoma, Kansas and North Texas	36 gravity (top price $1.00 for 40 gravity)	$0.92	
East Texas	flat	$0.98	
West Texas and New Mexico	flat	$0.65	
Gulf Coast	30 gravity	$0.86	
Louisiana	36 gravity	$0.92	
Rocky Mountains	36 gravity	$0.92	
Eastern States:—Lima		$1.15	
Indiana		$0.75	
Michigan, Midland		$0.55	no increase
Pennsylvania, National Transit		$1.80	
California:— Long Beach	26 gravity	$0.73	no increase
Playa del Ray	26 gravity	$0.70	no increase
Kettleman Hills	36 gravity	$0.72	no increase
Ellwood, f.o.b. ships	34 gravity	$0.81	no increase

Oklahoma City—Oklahoma

Two developments of major importance occurred in the Oklahoma City field during April.

Indian Territory Illuminating Oil Company in its No. 2 Little, northeast corner of section 27—T11N—R3W, discovered a new shallow oil horizon at 5,770 ft. On its first test the well flowed at the rate of 1,500 bbl. per day. The new pay horizon is Lower Pennsylvanian in age and is correlated with the Cleveland sand of east central Oklahoma. Over the central portion of the Oklahoma City field the Cleveland sand will, in all probability, produce only gas, but its oil possibilities on the east flank of the pool are very promising. Provided the Cleveland sand will prove of some continuity the area of new shallow oil production will cover around 5,000 acres, and its recovery may reach 5,000 bbl. per acre. The active development of the new sand will be delayed until the exhaustion of the more prolific lower horizons, though the failures in deep sands will probably be plugged up and completed as producers from the Cleveland sand.

Phillips Petroleum Company and Shell Petroleum Corporation in their No. 1 Berg, northeast of the southwest of section 26—T11N—R3W, a recent small non-flowing completion, encountered an interesting geological subsurface condition on the southwest flank of the Oklahoma City pool. The very soft "Wilcox" sand was apparently washed out to the hard Viola limestone escarpment at least on a portion of the southwest flank of the field, leaving but very few feet of saturated sand. In terms of oil reserves this condition may mean a reduction of the producing area of the "Wilcox" sand, formerly considered as proven, by some 1,000 acres, or by about 75,000,000 bbl. Cleveland sand will be probably productive in the indicated area, partially redeeming the absence of the "Wilcox" sand.

Kansas

Olsen Drilling Company and Shell Petroleum Corporation completed the largest gas well yet drilled in the State of Kansas in Section 26—T23S—R4W. The Mississippi "Chat" was drilled from 3,242 to 3,332 ft., the well having an initial gauge of 86,000,000 cubic feet of gas. This well is located in the South Study field, No. 41 on the WORLD PETROLEUM map published on p. 107 of March, 1932, issue, where one gas well was completed in 1930. The present interpretation places this new completion sufficiently high to assure this area of oil production from Viola limestone, Wilcox sand or the Arbuckle limestone. It is very probable that a major field, comparable with the Ritz-Canton-Galva, No. 32, is being opened.

The acreage surrounding this new well is held by major companies in sufficiently large tracts to assure an orderly development. Three new wells have started recently, and a number of other locations will undoubtedly follow.

BASIL B. ZAVOICO

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MEXICO

Rationalization

ESTABLISHMENT of a national organization, which will be semi-official, as a means of protecting and encouraging small, independent producers and stabilizing production, is a feature of a program for rehabilitating the Mexican petroleum industry which the Federal Government proposes to put into effect, announces Gen. Abelardo I. Rodriguez, Minister of Industry, Commerce and Labor. Minister Rodriguez's statement says, in part, as follows:

"An adequate program in the matter of petroleum, taking into consideration the experience and the vital national interests, will consist of:

(1) Endeavoring to procure a rational volume of normal production, taking into consideration the probable existing reserves, the mission, which because of its importance this source of public wealth must fulfill, and the conditions of the world market.

(2) Balancing the forces that move our petroleum industry, giving an entrance to private national companies and creating a semi-official organization of support and regulation.

(3) Guaranteeing the present and future supply of the domestic market by means of explored reserves and assuring the better use and conservation of the national petroleum resources.

"For the execution of this program, this Ministry has decided upon the following points of action:

(1) To expedite in the shortest possible time consistent with a careful examination dispatch of applications for concessions that are pending, principally confirmatory concessions, endeavoring in this way to define the situation of the national petroleum property.

(2) To introduce in our legislation the system pensions of exploration in order to allow the explorer rights of receiving the benefits of petroleum wherever he finds it. That is to say, the concessions will be mixed: of exploration and exploitation.

(3) To demand that the regular works, ordered by the law, are no longer nominal.

(4) To reduce, in a reasonable way, guided by a criterion of prudent conservation, the superficial extension of the concessions.

(5) To support, before the Ministry of Finance, the simplification of the tax system in the matter of petroleum, the reasonable reduction of exportation duties, and the creation of the progressive superficial tax which is now in project, upon the lands consigned in petroleum concessions.

(6) To regulate the principle of unitary exploitation, proclaimed in our law, and already accepted in the United States, in order to prevent the artificial acceleration of production with forced competitive exploitation.

(7) To make accessible for private companies the use of pipelines.

(8) To employ all possible means to open the doors of the petroleum industry to our citizens, with a view to forming a respectable body of Mexican experts.

(9) The constitution of a semi-official society, strictly national, to which the Government will belong and contribute to it petroleum lands and rights with a value equivalent to 50 percent of the shares, and whose mission will be principally to provide for the necessities of the State, and when necessary, to regulate the prices of petroleum in the country.

(10) To transform the functions and organization of the Administrative Control of National Petroleum, removing from it its present mission as producer and conferring upon it the triple mission of (a) maintaining in a permanent way a reserve of petroleum lands, technically sufficient, to guarantee the satisfaction of the necessities of the nation at any time and in any event; (b) formation of a nucleus of petroleum lands, and (c) making of exploitation contracts for lands under its control, accessible to any applicant, subject to general rules which will be previously fixed in a regulation, upon a basis of equality for all and priority of application. To this effect, the subsoil of all national lands under Federal jurisdiction will be given to the Administrative Control.

In explaining the reasons for laying out this program Minister Rodriguez reviewed the

decline of the Mexican petroleum industry from a production of 193,000,000 bbl. in 1921 to an estimated production of 30,000,000 bbl. for the present year which he attributed largely to the action of the petroleum companies in Mexico. These companies according to the Minister have found it convenient for various reasons to produce in other countries and hold their Mexican reserves with a minimum production. He mentions the fortunate circumstance that the decline occurred during a period of unprecedented low prices and resulted in saving Mexican petroleum for production during times when petroleum would be more valuable. Exploitation at present, however, had declined to a point where domestic supplies were not assured and therefore action in formulating a program to encourage further exploration and exploitation had become essential.

A national conference of all directly interested in the petroleum industry at which this program will be discussed has been suggested to Minister Rodriguez by Engineer Luis de Campoamor, prominent Mexican oil man. The suggestion is that the conclave be held here and that it be presided over by General Rodriguez, a technician named by the companies and another by petroleum dealers and distributors and petroleum land owners; that its delegates be restricted to 25 percent Government technical officials and the same proportion of technical employees of companies, and the remainder be representatives of dealers and distributors and oil land owners. The Ministry is reported to be favorably disposed to the proposition.

Exploration

GEOLOGISTS of the Mexican Eagle Oil Co. (Royal Dutch Shell) and the Huasteca Petroleum Co. (Standard Oil of Indiana) have discovered what are considered to be promising petroleum deposits in the Tantoyuca region, Vera Cruz State. The deposits are near the Sierra de Chontla. One of them is to the east of that range, passing by Tampico, Comales and Pecero, and the other to the west, passing by Chila, Cortaza, Chila Perez, Santa Clara and Pecero. Both deposits are believed to have their confluence in the Hacienda del Calvario, in the Congregacion de Pecero.

The Administrative Control of National Petroleum has brought in a well on its Tantoyuca property at 4,000 ft. with an initial daily output of 2,000 bbl. As this oil is said to be of superior quality and comparable with that produced in the Tuxpan region, the Administrative Control proposes to sink the well some 300 ft. deeper in the expectation that a great volume of petroleum, possibly as high as 10,000 bbl. daily, will be encountered.

Exports

AN exceptionally heavy movement of petroleum through Tampico to the United States was registered during the first half of April, it being estimated that during that period approximately 2,000,000 bbl. were exported. During the same fortnight, 33 tankers, each carrying 60,000 bbl., left Tampico for the United States. During the last half of March 18 tankers cleared the port for the United States. The pending bill in the American legislature to establish higher import levies on petroleum is said to have prompted these heavy shipments.

Tax Revenue

A STEADY increase in the Federal Government's revenues from petroleum production and exportation levies was registered during the first quarter of the present year, according to figures of the special taxations department of the Ministry of Finance. The department places income from production taxes during the period at 863,619.73 pesos (approximately $287,873, U. S.) and 621,584.79 pesos (about $207,193, U. S.) was yielded in that time by exportation levies. The production tax returns by months during the quarter were: January, 213,671.13 pesos; February, 282,710.15 pesos and March, 377,238.45 pesos. The export tax yield by months was: January, 150,841.39 pesos; February, 193.319.55 pesos and March, 277,423.85 pesos.

Federal Government's income during March from gasoline consumption taxes was 1,092,913.11 pesos (approximately $364,304, U. S.) against 605,179.29 pesos from that source during the preceding month.

The Mexican Government is said to be considering abolishing the export petroleum tax as a means of encouraging sales abroad. The abolition of this tax would serve as a partial compensation for the recently enacted tax of 20 centavos per hectarea on oil lands under exploitation or exploration. According to the leading Mexico daily, EXCELSIOR, the Government considers it advantageous to abolish the comparatively small revenue producer—export tax—and retain the land levy which is much more profitable for the Government.

Automobile license plates will be issued gratis starting May 1 in the Federal District (which includes Mexico City) under a decree of President Pascual Ortiz Rubio. Instead of charging motorists for these plates, a special tax of 1.5 centavos (some ½ cent) per liter will be levied on gasoline for motor fuel bought in the District. Gasoline vendors will be empowered to include this tax in the price of the commodity and will be obliged to turn this and the existing six centavo tax per liter in to the District treasury. The Government feels that granting license plates free and increasing the levy on gasoline will save the public much trouble and at the same time increase municipal revenues. All cars that enjoy official licenses, which were hertofore free, will now have to participate in this tax.

THE Pierce Oil Company has been authorized by the petroleum department of the Ministry of Industry, Commerce and Labor to install a plant for the continuous treatment of gasoline in its refinery at Arbol Grande, Tamaulipas state.

The Anahuac Petroleum Company, a Mexican enterprise, proposes soon to resume operations in lands it has under concession in various parts of north and southeastern Mexico, according to Lawyer Luis Sevilla, chairman of the board of directors. Sevilla says this action will be a direct result of the announced program of General Abelardo J. Rodriguez for the betterment of the national petroleum industry.

Dynamiters Arrested

AS a means of preventing repetition of the two dynamite bomb attacks against its pipeline from Palma Sola, Vera Cruz State to its refinery at Atzcapotzalco, Federal District, the Mexican Eagle Oil Company has installed flexible metal pads along various parts of the line. These protectors, it is expected, will minimize the concussion of explosions of dynamite bombs. The cooperation of the Federal District police and those of States through which the oleoduct passes has been assured in guarding the pipeline.

On April 20 six men were placed under arrest near Mexico City charged with responsibility for dynamiting the Palma Solo Atzcapotzalco pipeline as reported last month in WORLD PETROLEUM. The six men who are said to be Communists are reported by the police to have confessed to an attempt to obtain over one million pesos from the Mexican Eagle under threats of destroying the pipeline and refinery.

DOUGLAS GRAHAME

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JAMES A. MOFFETT, Vice President of the Standard Oil Company of New Jersey, returned from Europe on the EUROPA April 18.

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Petroleum cannot be purchased under contract from the Soviets by the town of Hull, England, as a resolution in force permits contracts to be made only with companies holding the King's Seal, and the R. O. P. has not been granted the Seal. The town council purchases Russian gasoline without formal contract.

RUSSIA

Official Figures of Soviet Oil Operations*

1932	Crude Production (Bbl.)	Daily Average (Bbl.)	Run to Stills (Bbl.)	Drilling (Feet)
January	13,059,900	421,300	11,927,882	152,532
February	12,194,000	420,482	11,428,900	193,185
March	13,852,300	449,197	12,866,700	240,433
Total 1st quarter 1932	39,106,200	430,550	36,223,482	586,150
Total last quarter 1931	41,249,100	453,329	37,444,300	453,828
Total 1st quarter 1931	35,869,400	392,530	31,110,800	542,842
Revised Quota	for 1932—191,800,000 bbl. or 525,400 bbl. daily average			

*Crude oil conversion ratio—seven bbl.—One ton.

Production

WHILE crude production during the first quarter of this year fell below the figure for the last quarter of 1931, it increased considerably over the figure for the corresponding quarter of 1931 and moreover a notable change for the better has taken place during the month of March. During the second half of March a powerful gusher was opened at the Bibi Eibat field of Baku. Of the 39,106,200 bbl. crude produced during the quarter 21,801,339 bbl. were derived from the Baku fields.

A powerful gusher throwing 140 bbl. of good quality crude 60 meters into the air in the 18 minutes it flowed was brought in at Mirsaano field in Georgia. The well which is controlled by the Grozneft trust was capped.

The operations of the major oil trusts Azneft and Grozneft grew from 94 percent and 99 percent of the plan respectively at the beginning of the month to 96 and 107 percent at the end of the month. Transportation difficulties however are still handicapping further progress. Drilling and drilling speed were among other subjects which occupied the attention of the All Russian Conference held at Grozni in February. Preparations for the Conference were made by the Petroleum Institutes of Soviet Russia which are gradually getting in closer contact with the operating organizations of the industry. Several sections were formed for the conference and over 40 papers were read on various subjects in connection with production of oil.

Particular interest was given to the following problems:

Exploitation of gushers
Air—and Gaslift
The Marietta method
Deep pumping and the influence of sand
Unification and standardization of methods and equipment
Rationalization of operations
Safety devices
Labor problems
Construction of wells, cementing, swabbing, etc.

Refinery Operations Azneft Baku and Batum
(Barrels)

	1931 Baku	1931 Batum	1931 Total	Plan 1932
Straight run Gasoline	400,000	115,000	515,000	570,000
Cracked Gasoline	37,500	92,500	130,000	250,000
Kerosene	1,965,000	470,000	2,435,000	3,200,000
Lubeoil: Machine and Cylinder	335,000	.....	335,000	450,000
Lubeoil: Heavy Motor Lubeoil	136,000	.....	136,000	200,000
Bright Stocks	.....	.....	.....	33,000
Asphalt	30,000	.....	30,000	189,000
All other	1,000	141,000	142,000	150,000

Soviet, Oil Export
(Tons)

	1931	1930
Gasoline	1,782,200	1,470,100
Kerosene	727,600	777,500
Lubeoil	223,600	200,500
Gasoil	427,500	423,300
Fuel oil	1,791,500	1,612,400
Heavy Motorlubeoil	4,100	10,500
Solar Oil	37,600	70,700
Crude Oil	165,000	194,000
Sakhalin Crude	112,000	41,500
Other products	8,300	2,500
Total	5,277,400	4,813,000

Planned Soviet Oil Operations, 1932 and Actual Operations, 1931

	Crude Production (barrels) 1932	Crude Production (barrels) 1931	Run to Stills (barrels) 1932	Run to Stills (barrels) 1931	Drilling (Feet) 1932	Drilling (Feet) 1931
Azneft	108,500,000	92,078,000	91,455,000	79,352,000	1,894,200	1,468,840
Grozneft	59,850,000	56,445,900	**66,150,000	54,377,200	580,800	862,470
All Other*	23,450,000	7,819,000	5,250,000		468,600	
Total	191,800,000	156,342,900	162,855,000	133,669,200	2,943,600	2,331,310

*Crude Production 1931 of Maikop and Emba were 3,850,000 and 2,275,000 bbl. respectively.

**Including 8,400,000 bbl. of Maikop crude to be refined at Grozni.

J. WEGRIN

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CANADA

Imports

IMPORTS of crude showed a heavy decline in February totalling 44,118,847 gallons compared with 72,728,643 gallons in January, and 61,696,245 gallons in February of 1931. February 1932 imports included 4,463,900 gallons from Peru.

Gasoline imports were sharply up at 3,576,829 gallons compared with 2,139,344 gallons in January. Imports for February of this year were close to those of the corresponding month in 1931, which were 3,640,637 gallons.

Production

CRUDE petroleum production in Canada showed a further decline, being 90,841 bbl. compared with 96,912 bbl. in January and 155,651 bbl. in February of 1931.

Monopoly

NEWFOUNDLAND Government is at present negotiating with the Imperial Oil Company of Toronto in an effort to arrange a monopoly for that company in return for an investment of $1,750,000 in a

Pipelines

ON April 12 the Armavir-Ukraine section of the new Grozni-Ukraine pipeline was put in operation for the first time.

Drilling plans for the first quarter of 1932 have been fulfilled 111 percent for all trusts; 125 percent for Azneft and 89 percent for Grozneft. However, wells brought under production fulfilled only about 50 percent of the plan showing a grave lack of quality in drilling.

$2,500,000 loan which the Colony is trying to float in an effort to meet external obligations. With Imperial controlling some 80 percent of the petroleum sales in Newfoundland at present, only a desire to support the Government in its attempts to raise revenue prompts them to consider a monopoly which would not be of great additional advantage to them. Progress of the negotiations to date, however, indicate that a satisfactory conclusion will be reached in the near future.

The proposal to grant the Imperial a petroleum monopoly is said to have come originally from Sir Percy Thompson, of the British Treasury Department who is now in Newfoundland. Sir Percy outlined his plan to the Newfoundland Board of Trade where presumably, it met with a favorable reception.

Government Taxation

ALL the provinces have now handed down their budgets, and increased hardships for the petroleum industry are observable. The most prominent of these is the gasoline tax which has been increased in seven of the nine provinces. British Columbia and New Brunswick have brought down two cent increases, and the other provinces involved have brought into effect a one cent increase. Costs of motor licenses were increased in five provinces.

Dominion Government tax increases affect the petroleum industry through the Import Excise Tax which applies on all imports and is increased from one to three percent. The sales tax is raised from four to six percent. The corporation income tax is increased from 10 to 11 percent. In the case of the Dominion Government, upward revisions do not affect the petroleum industry any more than any other; but in the case of the provinces the increases in gasoline tax are discriminatory and may quite easily have reached a point where consumption will be seriously affected. In any case, gasoline prices have reached a level which will tend to make it difficult for refineries to pass on any extra costs that may cut into their present narrow margin of profit.

New Developments

AFTER a ten years' closure the wells of Imperial Oil at Fort Norman flowed crude oil when tested recently by the company's engineer. Fort Norman is the most northerly of oil fields. It lies at the rim of the Arctic Circle. About seven years ago Imperial Oil men withdrew from the area after their efforts had brought forth producing wells. The remoteness of the district rendered the exploitation of the wells uneconomic. Discovery of a possible mining district about 250 miles to the westward by water has, however, changed the economic aspect of the field, and Imperial Oil, in line with their usual progressive policy, will be in a position to supply cheap fuel for power purposes should developments warrant it.

Gasoline Investigation

THE Dominion Government Parliamentary inquiry into gasoline prices still wanders along its rather indefinite way, and at time of writing shows no signs of conclusion. So far, it is futile to even attempt to interpret the effect of the maze of evidence upon the Committee's ultimate finding. It has, however, demonstrated the difficulties that attend the deliberation of a group of layminds enquiring into the workings of a highly intricate industry.

R. C. ROWE

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FRENCH PETROLEUM IMPORTS 1932

(Barrels of 42 U. S. gallons)

	Crude Oil	Gasoline	Kerosene	Lube Oil	Gas Oil	Fuel Oil	Total
Germany	....	4,170	424	2,387	259	....	7,240
Egypt	....	5,236	7	....	....	....	5,243
Luxemburg	....	31,842	399	5,855	1,631	4,655	44,382
United States	....	808,299	131,294	151,188	20,111	22,637	1,133,529
England	....	621	13	1,846	....	....	2,480
Persia	220,280	351,237	45,446	79	87,586	176,523	890,151
Poland	....	2,290	351	2,943	1,998	....	7,582
Roumania	....	275,017	78,310	303	116,346	38,166	508,142
Russia	....	694,886	4,247	30,540	49,156	38,311	817,140
Holland	....	104	....	91	684	436	1,315
South America	168,138	44,705	1,258	647	142,074	338,791	695,613
Other Countries	....	12,098	2,737	1,204	3,751	6	19,796
	388,418	2,230,505	273,486	197,083	423,596	619,523	4,132,613

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ROUMANIA

Combine

VASILESCU-CARPEN, Minister of Industry and Commerce, has presented a bill to the Chamber of Deputies, legalizing the amalgamation of the five Roumanian oil companies thereby forwarding his favorite project, as there seems every likelihood that the bill will become law in the near future. Although all the companies in question—Creditul Minier, I.R.D.P., Petrolal Românesc, Sondajul, and Petrol-Govora—have not agreed to join the combine, a provision of the bill allowing for the formation of the new company provided that 60 percent of the total assets of all five companies participate removes the obstacle of one or two companies destroying the entire plan. Creditul Minier with the expectation of having a 58 percent share of the new Soc. Nationala de Petrol will represent the principal partner with the Government in the new company. It is generally understood that the amalgamation means little more than the State aiding the Creditul Minier out of its present difficulties after the latter has absorbed the other four companies.

Capital of the new company will amount to 1,000,000,000 lei. Government will have a 30 percent interest and will be represented by four directors on the board. Minister of Industry and Commerce will have the right to veto measures not conducive to the best interests of the State. In addition to choice concessions, advantages in the domestic market and assistance in the export market, the new company will receive fresh capital from the State.

Formation of the company is designed to save the shareholders of the five Roumanian companies and to put them in a better position to compete with companies formed with foreign capital.

Production

ROUMANIAN production continues at about 120,000 bbl. per day showing a tendency to drop below that figure. The new field at Gorgoteni has shown a tendency to deteriorate rapidly under competitive drilling carried on by Unirea, Romano-Americana, Prahova, Metal Petrol, and Colombia. Some prolific wells have already gone to gas and some promising new locations have produced only gas. Destruction of the potentialities of this most prolific Roumanian field will mean a decrease in Roumanian production to a figure that petroleum industrialists refused to discuss in the conservation scheme of 1930.

Refining

STEUAU ROMANA has established a record for the operation of its three Dubbs cracking units at Campina, Roumania operating the installation for 69 days, 2 hours without a stop for cleaning. The installation treated 15,000 tons of a mixture 80 percent of residual fuel and 20 percent of a paraffin distillate producing a full range of products by cracking under vapor pressure.

E. I. MARGULIUS

Russian oil tanker of domestic design and construction.

SHIPPING

London: May

BRITISH Board of Trade has now issued Statutory Rules and Orders applying to new Load Line regulations and probably the most far-reaching alteration which has been made is the allowance for deeper loading of vessels carrying oil in bulk as compared with cargo vessels. It has been the practice in America to load these vessels to a draft much in excess of that permitted in other countries without any untoward results. This has been possible because tankers exceed cargo vessels in seaworthiness. International Conference therefore concluded that a reduced freeboard might well be allowed. New tables in application will permit, in the case of a 400 ft. vessel, an increase of draft of about 12 in. and for a 500 ft. ship an increase of about 15 in.

New Tonnage

TANKER tonnage now in hand comprises 23⅓ percent of the total steam and motor tonnage being built in the world according to the latest figures of Lloyd's Register of Shipbuilding Returns. Tankers under construction in the world amount to 39 vessels of 302,172 tons, of which 10 vessels of 59,182 tons are being built in Great Britain and Ireland. Of the 39 tankers under construction, 34 are motorships and the five steam tankers are all being built in Great Britain.

Orders have just been placed for two oil tank vessels each of 1,000 tons capacity with the Compania Arrendataria del Monopolio de Petroleos, Madrid. One will be built at Santander in the Corcho Hijos Yard and the other at Vigo by Messrs. Hijo de J. Barreras, both ships being to the design of Sir Joseph Isherwood and Company of London.

A recent launch that has taken place is from the Marty Yard, Nikolaoff on the Black Sea, of the 10,000 ton tanker URAL.

Satisfactory trials have recently been carried out by the motor tanker JOSEFINA THORDEN, the first of her type to fly the Finnish flag, built at the Gothenburg Works of Eriksbergs Mek. Verkstads to the order of Rederi A/B Suomi, Helsingfors: length 407 ft., moulded breadth 55 ft., depth 32 ft. 3 in., carrying capacity of 9,765 tons deadweight. Her machinery consists of two B. and W. type engines giving an output of 2,800 i. h.p.

Chartering

TANKER market continues quiet, few fixtures having been concluded. Some 200,000 tons, representing a marked decrease in tonnage laid up, is all that has been withdrawn during the past fortnight. American tonnage laid up in the past and which is now being employed on American coasting work accounts for this diminution.

As regards clean oils, Russian charterers are in the market for a 9,000 tonner for 12 consecutive voyages from Russian Black Sea ports to Europe.

Enquiry for the carriage of black oils has somewhat subsided and the only fixture of note is a large tanker from California to Japan April–May loading at a rate of 25 cents crude and/or fuel oil.

U. S. Tanker Activity

SEVERAL of the large American companies with fields in Mexico and South America have put their whole fleets on the Tampico and Venezuelan routes in an endeavor to lay up stocks in case the proposed tax on imports comes into effect. It is estimated that no less than 50 large vessels are now carrying South American and Mexican crude oil and refined products to U. S. Atlantic coast ports.

A. C. HARDY

Tankers Recently Launched and Complete

Name	Owners	Total Power	Remarks
BRITAMLUBE	British American Oil Co. Ltd. Montreal		Launched Mar.
JOSEFINA THORDEN	Rederi A/B Suomi Helsingfors	2,800 I	Trials run
URAL	Soviet Govt.	.....	Launched Mar.

Ship Sales

Name	Owner	Gross Tons	Sold to	Remarks
ANAM	Asiatic Pet. Co. Ltd.	493	.....	Motor tan barge
JOHN GEORGE	J. Harker Ltd. Knottingley	250	Canadian Buyers	Under £9,50

FINANCE

London: April

LACK of initiative on the part of the London oil market has again been evident during the past few weeks. Price fluctuations, instead of receiving their chief impetus from local views of the outlook for the industry and for individual shares, have been dependent on overseas influences. The public in this country is doing practically nothing in oil shares, and sentiment among professional operators has been swayed largely by the tone of the Continental and American stock markets. Since European bourses are still unsettled by the aftermath of the Kreuger crash and by existing uncertainty on international finance, Paris, Amsterdam and other centres have been sellers on balance. The New York market has also been weak. London prices have therefore fluctuated uncertainly, and with a general downward tendency, several of the leaders having established low records for the current year. Little encouragement has been derived from the rise in crude oil prices in the Mid-continent and other fields of the United States, although the American situation is evidently being closely watched for continued signs of improvement. On the other hand, the market is definitely disappointed at the failure to stage an advance in British petrol prices. Current prices of oil products, however, can have no effect on the forthcoming annual reports of the principal companies, and these are likely to be a major market influence in the immediate future. Profits and dividends for 1931 can hardly make a satisfactory showing; but the technical position of the oil share market is now sound enough, and some recovery will probably take place in the shares of any company whose results prove to be better than expected.

MARKET estimates of probable dividends on major shares are becoming more definite as the dividend dates approach, although forecasts are necessarily put out with greater caution than usual.

Estimated 1931 Dividends

	Total dividend 1930 percent	Estimated total 1931 percent
Anglo-Egyptian "B"	17½	10 to 12½
Anglo-Persian	15	7½ to 10
Burmah	22½	10 to 15
Lobitos	10	10
Shell (Tax free)	17½	7½ to 10
Royal Dutch	17	7 to 10
V.O.C.	17½	7½ to 10

Some of the estimates will probably prove to have been wide of the mark. Compared with the distribution for 1930, Burmah, among the biggest undertakings, is expected to make a relatively good return. The company's shares, indicated last month as being cheaper than other leaders, are the only shares in the list to show a rise on balance during recent weeks.

MAJOR British distributing companies so seldom put out any official statement, except when selling prices are changed, that the intimation distributed to the British press last month was something of a curiosity. It stated through an "official" that no agreement had been reached in regard to an increase in petrol prices, although the question was being considered, and went on to point out that the price, allowing for the tax, was exceptionally low, and that some increase would be necessary to restore it to an economic level. This statement may be taken at its face value, as coming from an authentic quarter, but it naturally does not tell the whole story. A demand for an increased share of the British market, made by Russian Oil Products in return for an agreement as to price, has been the principal impediment to a general raising of selling quotations. In view of the big expansion in Soviet production, and the now traditional attitude of the U. S. S. R. to foreign markets, the Russians evidently have a very strong case, although their demands may not be conceded.

LOW prices in the British market were largely responsible for the difficulties of British Controlled Oilfields during 1931. Contracts for the company's sales in Venezuela are based on United Kingdom prices, and as a result of unremunerative quotations, production income declined, despite an increase in the volume of output. By restricting development work and introducing economies in every department, the directors have achieved a big reduction in expenses, but, after providing for depreciation of wells and plant, the result of the year's operations was a debit balance of $189,688 (Canadian). There is now a deficit of $21,899 at profit and loss account. The company has had an unfortunate career, both on the production and financial side, and its definite attainment of the dividend paying stage can only follow the restoration of economic prices for oil products.

IRAQ oil has achieved the distinction of carrying the influence of the oil industry from the oil share market into other sections of the Stock Exchange. The announcement of the placing of orders for the Iraq Petroleum Company's pipe line from Mosul to the Mediterranean raised quotations for some of the shares of iron and steel companies benefitting by the contracts. Developments in Iraq, however, have not been a factor in the oil market itself. For Anglo-Persian and Shell, the British companies participating in Iraq Petroleum, a share in a potential new field is not a factor of sufficient importance to move share prices. On the other hand, any development which brings Iraq oil nearer the world's markets can be considered an adverse factor for companies not directly interested, and is therefore a "bear point" for the oil market generally, in so far as it has any influence at all.

ALEC H. DAY

London Stock Exchange Prices

1932 High	1932 Low	Last Year's Div. % per Ann.	Share	March 15–April 15 First	High	Low	Last	Change
1 1/32	9/32	.....	Anglo-Ecuadorian	5/16	5/16	9/32	5/16	.....
1 4/16	1 3/32	17½	Anglo-Egyptian "B"	1¼	1 5/16	1⅛	1⅛	— 1/16
2 1/16	1 23/32	15	Anglo-Persian	1 13/16	1 29/32	1 23/32	1¾	— 1/16
9/16	½	20	Apex Trinidad (5s.)	½	17/32	½	½	.....
2 1/32	4/16	.....	Attock	1 9/32	1 9/32	9/16	9/16	— 1/32
4/32	3/16	5*	Brit. Borneo (6s.)	4/32	4/32	3/16	3/16	— 1/32
3/16	3/16	5¼	Brit. Burmah (8s.)	3/16	3/16	3/16	3/16	.....
3/32	1/16	.....	Brit. Controlled ($5)	1/16	1/16	1/16	1/16	.....
1/8	2/32	.....	Brit. Controlled Pfd. ($5)	1/8	1/8	3/32	3/32	— 1/32
2 9/32	1 13/16	22½	Burmah	2 1/8	2 1/32	2 1/16	2 5/32	+ 1/32
1 3/32	9/32	12c.	Canadian Eagle (No par)	11/32	3/8	9/32	9/32	— 1/16
3/8	½	.....	Creole (No par)	3/8	3/8	½	½	— 1/8
1/8	1/16	.....	Kern River (10s.)	3/32	3/32	1/16	1/16	— 1/32
1 3/8	1 1/32	10	Lobitos	1 3/16	1 7/32	1 5/32	1 3/16	.....
1 3/32	5/16	6	Mexican Eagle (84 Mex.)	11/32	3/8	5/16	5/16	— 1/32
26¼	15½	$1.6	Pan American "B" ($50)	23½	23½	15½	17	— 6½
1/4	5/32	2½	Phoenix	7/32	7/32	5/32	3/16	— 1/32
20⅛	13	17	Royal Dutch (fl. 100)	16⅜	17	13	13⅜	— 3
2½	1¾	17½*	Shell Transport	2 1/32	2 5/32	1¾	1 13/16	— 7/32
9/32	3/16	4	Steaua Romana	¼	9/32	7/32	7/32	— 1/32
1 13/32	1 3/16	5	Trinidad Leasehold	1¾	1 9/32	1 3/16	1¼	.....
3/16	3/32	.....	Untd. Brit. of Trinidad (6s.8d.)	⅛	⅛	3/32	3/32	— 1/32
1 11/32	1 3/32	17½	Venezuelan Oil Concessions	1 3/32	1 3/32	1	1 1/32	— 1/16

Nominal value of shares £1 unless otherwise stated by bracketed figures.

* Denotes Tax-free dividend. c. Denotes cent per share.

Paris Bourse Prices

1931 Div.	1931 Par	Share	March 15 to April 14 First	High	Low	Last	Change	Position, Apr. 13, 1931
30 Lei	500 Lei	Astra Romana	68	70	52	55	−13	94
....	500 Lei	Colombia	63	66	52	57	−6	86
50 Lei	500 Lei	Concordia	48	48	36	40	−8	72
....	500 Fr.	Cdré. Gén des Pétroles act	..	..	..	..	..	..
....	500 Fr.	Cdré. Gén des Pétroles part	..	935	820	..	..	..
....	500 Fr.	Franco Pol. des Pétroles act	70	70	47	49	−21	69
....	....	Franco Pol. des Pétroles part	..	200	176	..	..	..
1 $	10 $	Franco Wyoming	216	216	175	191	−25	302
20 Fr.	500 Fr.	S. G. des Huiles de Pétrole act	260	260	220	235	−25	390
....	....	" " part	86	86	56	..	..	..
....	500 Fr.	C. Française des Pétroles	501	502	465	..	..	600
....	500 Fr.	C. Industrielle des Pétroles	531	561	510	440	−91	830
70 Fr.	500 Fr.	Lille Bonnières Colombes prio	665	673	645	663	−2	935
45 Fr.	500 Fr.	" " ord	397	411	386	405	+8	610
....	500 Fr.	Malopolska act	34	34	26	27	−7	48
....	....	Malopolska part	..	32	25	27	..	241
....	....	Mexican Eagle	46	46	38	38	−8	..
....	250 Fr.	Omnium Inter. des Pétroles	85	92	72	72	−13	140
50 Fr.	500 Fr.	Pechelbronn	470	470	440	440	−30	700
60 Fr. B.	500 Fr. B.	Petrofina	455	455	400	407	−48	550
240 Fl.	1000 Fl.	Royal Dutch	15170	15170	12150	12525	−2645	28800
24 Fl.	100 Fl.	Royal Dutch 1/10	1530	1530	1235	1277	−253	2820
....	1 £	Shell	200	200	176	181	−19	394
25 Fr.	500 Fr.	Steaua Française	248	264	227	250	+2	199

Paris: April

OIL shares are less and less in favor on the Paris Bourse, in fact all but the leading ones are shunned nowadays and have without exception lost ground again this month. In this connection, it is interesting to note that whereas 10 years ago a large number of different companies' shares, roughly 60 in number, were actively in demand every day on the stock exchange—35 at most are now quoted, and of these at least a dozen do not change hands once in six months.

The explanation lies partly in the fact that a great number of French companies, at one time interested in extracting oil in different countries, have gradually abandoned their interests and have sustained such losses that they have been obliged to wind up their affairs.

OIL shares now available on the Paris Bourse can be divided into six groups: The French group comprising the C.F.P. and the S.A.E.M. Pechelbronn (as distinct from distributing companies); the Roumanian group comprising—Astra, Concordia, Steaua, Victoria and Petrol Block; the Polish group now reduced to the Credit General des Petroles, Malopolska, the Franco Polonaise des Petroles and Sylva Plana; the Anglo-Dutch group comprising the Royal Dutch, Shell Transport, Mexican and Canadian Eagles; the Distributing companies group composed of the C.I.P., Lille Bonnieres and Colombes, Economique, S.G.H.P. and the Raffinerie des Petroles du Nord, etc.; and finally the (pre-revolution) Russian companies group whose shares are never quoted and who will one day inevitably have to cut their losses and wind up affairs for there is little hope of ever obtaining compensation from the Soviets for confiscated property.

As far as the French Group is concerned there is little to be said either about the shares of the C.F.P. or about those of Pechelbronn. The former are held partly by the French State and partly by the big companies directly interested in the C.F.P. and therefore they do not change hands very frequently. The latter is a sound concern which appears to have suffered less from the general depression than other companies.

OWING to the competition set up by Roumanian oil products on the worlds' markets it was expected that the price of the whole of the groups shares would have advanced in unison with the development of the companies, but this has not been the case. Steaua Française has undoubtedly obtained the best results this year and has succeeded in establishing a firm hold on several important markets both in Europe and Northern Africa. It has even exported products to America. Nevertheless caution is more than necessary The alternative to distributing a dividend was to reduce the companies capital and that is what is being done. From Fr. 115,000,000 it is to be reduced by Fr. 18,000,000 to Fr. 97,000,000. The arrangement is a distinctly advantageous one for the 3,600 A shares and the 32,400 B shares which are to be bought up and annulled and whose nominal value is Fr. 500 are to be paid for at the rate of Fr. 210 per share or a total sum of Fr. 7,560,-000 which leaves a reserve of Fr. 10,-440,000 which will go to the reserve fund against a possible further decline of the companies investments.

This reduction in capital will automatically increase the intrinsic value of the Steaua's shares and the company's position at present is a strong one. The same cannot be said for the other companies in the group which are not in nearly such active demand on the Stock Exchange.

SHAREHOLDERS in the Polish Group have not had much to encourage them for several years. Failures and successive concentration of the remaining companies have reduced French interests in Poland to the minimum. Whether the merger of the Credit General des Petroles and the S. Malopolska will give the companies a new lease of life is doubtful but every effort is to be directed to that end. A quorum not having been present at the last extraordinary meeting convened, it was postponed, but in the meantime a new Board of Directors has been formed which comprises several men in prominent positions all bent upon extricating both companies from their exceedingly difficult positions. Mr. Breaud, ex-managing director of the State Railways is to be chairman. If there is any possible means of saving the situation the new board will do it but the longer negotiations last the less likely a solution becomes owing to the repercussion of the Austrian situation with regard to the company.

The rumour that the Polish Government was negotiating a monopoly with the Standard Oil Co., has been emphatically denied here.

DURING the past year low prices of petroleum products, decreasing automobile circulation and increased taxation have done much to jeopardize the position of the companies belonging to the distributing group, and unless the situation changes it is difficult to foresee how they will ever be in a position to reconquer the confidence of the French public again. Last years' financial results were anything but good. This year they will be worse. The problem becomes more and more complex because the strain of the losses imposed upon the distributing organizations in France cannot be shouldered indefinitely—they amount to over Fr. 1,000,000 per day and in the face of the existing crisis are likely to increase rather than to diminuish. Partly realizing these facts buyers and shareholders are extremely nervous and are very much inclined to leave oil shares strictly alone.

THE Anglo-Dutch group of shares is undoubtedly the one which is the most in demand, because of its international character. Nevertheless the value of Royal Dutch shares is still sinking partly on account of the international situation and more especially in the case of the Paris Bourse because of the attacks made upon the company and upon Sir Henri Deterding, both in the press and by private circular to clients, by a group of speculators led by the famous Mme. Hanau. Her recent arrest led to the disclosure of her speculations for a fall, but in spite of this the harm has been done and others are continuing the campaign. So little is needed in these days of extreme nervousness to raise a shareholders suspicion; he is always ready to believe the worst.

E. J. ANDRE

New York: April

LAST month witnessed a new series of bear market lows in security prices, the down trend being broken only by a few short-lived technical rallies. Prices ignored the further strengthening of the credit situation through continued functioning of the Reconstruction Finance Corporation and the Glass-Steagall bill, and only Government bonds showed any appreciable response to the Federal Reserve's intensified program of purchasing Government securities as a means of further releasing credit and stimulating its flow into business channels. However, the effects of these forces will not necessarily be lost through delay in their expected manifestations, and the groundwork for definite business improvement is perhaps being laid at this time. Important international problems remain to be solved and many individual situations at home continue to be hard pressed, but there appears to be a gradual strengthening of confidence in the future permeating the country.

The stock market has appeared to be responsive to the obvious negative developments that have been coming to a head from time to time, such as apparent Congressional aberration, failure of business to show normal seasonal gains this spring, and more individual unfavorable disclosures such as the Kreuger collapse with its evidence of gross falsification of accounts and the Middle West Utilities receivership.

The oil shares held up for a time better than the market as a whole, perhaps because of pool activity predicated upon the advance in crude and gasoline prices; but they finally gave way into new low ground and showed some fairly substantial losses as recorded in the tabulation.

The latest available oil statistics of the Bureau of Mines, covering February, showed a decline in domestic consumption of gasoline of two percent from February, 1931. The unseasonably cold weather of March very probably resulted in another decline, and the question has become more pointed whether 1932 will not be the first year to show a decline in domestic gasoline consumption. The declining trend in exports will undoubtedly continue and will tend to become more pronounced if the contemplated excise taxes on oils are put into effect.

Although the industry is being quite successful in balancing supply and demand for the time being, stocks are so large that little further in the way of higher prices is likely to be accomplished unless even greater cooperative restraint is secured all along the line; and the leaders of the industry will do well to watch closely the trend of gasoline consumption in the spring and summer months. The present outlook is for a slightly more profitable season than last year, but it would not require very much unwise production, refining or marketing to upset the present balance.

INCLUDED in the new revenue bill as referred to the Senate by the House are special excise taxes of a cent a gallon on imports of gasoline, lubricants, gas oil and fuel oil. That these levies are quite unlikely to yield anything like the estimated revenues is indicated by the steps being taken by the major importers of oil to rearrange their importing and exporting business to obviate bringing foreign oils into the country.

An announcement by an official of an important subsidiary of Shell Union Oil states that there have been held in readiness for some months plans for readjusting shipments to such an end. During the past year its imports of gasoline have been steadily reduced to the extent of about 50 percent as compared with 1930. This resulted in a corresponding decline in its American exports which were replaced in foreign markets by Royal Dutch-Shell gasoline from Venezuela. This rearrangement involves only a small disadvantage in shipping costs which would be more than offset by the proposed excise levies. Further prosecution of this substitution plan will be relatively easy in view of the close affiliation with the Royal-Dutch-Shell interests, and most of the Shell Union imports will cease if the new taxes go into effect.

Standard Oil Company (New Jersey) and Pan American Petroleum and Transport have practically completed arrangements for the purchase by the former of the latter's foreign properties as reported elsewhere in this issue. Proposed payment in the form of cash and stock is estimated at approximately $150,000,000, about half of which would be in cash, now available in the Jersey company's treasury. The sale is reported to be due in part to the proposed import tax which would make it difficult for Pan American to continue importing from Venezuela and Aruba sufficient petroleum products to satisfy their domestic requirements while their foreign outlets, unlike the Standard Oil Company (New Jersey) are not sufficiently developed to handle the entire output of their South American properties.

STANDARD Oil Company of California reported consolidated net income for 1931 of $14,559,593 after all charges and inventory adjustment, equal to $1.11 a share on 13,102,900 outstanding shares. This compares with 1930 net $37,675,300 equal to $2.87 a share. Financial position at the year-end was very strong with cash and call loans of $11,607,000 in excess of total current liabilities of $9,174,000. Additional liquid assets were in marketable securities to the amount of $2,897,000, and total current assets were $90,040,000. Inventory write-off for the year, due to low prices, amounted to $7,300,000.

SINCLAIR Consolidated Oil Corporation, which is now merged with Prairie Oil and Gas and Prairie Pipe Line to form Consolidated Oil Corporation, has reported for the 13 months ended January 31, 1932, a consolidated net loss of $22,214,002 after charges, compared with

New York Stock Prices

1932 High	1932 Low	Current Div. $ per Annum	Stock (Par Value $)	March 21 to April 16 Sales (Shares)	First	High	Low	Last	Net Change[1]
12⅞	8⅝	1.00	Atlantic Refining (25)	39,800	11	12	8⅞	10	−1
5⅞	4	....	Barnsdall 'A' (25)	42,800	4½	4¾	4	4⅛	− ⅜
⅝	⅜	....	Colon Oil (No)	1,200	½	⅝	½	⅝	.....
6⅝	4⅛	....	Consol. Oil (No)	140,400	5⅞	6⅝	4⅛	5	− ¾
7	4⅞	....	Continental Oil (No)	114,600	6	7	4⅞	5½	− ½
2⅜	1¾	....	Creole Petroleum (No)	33,100	2⅛	2⅛	1⅞	2	− ⅛
35⅞	25⅜	....	Gulf Oil Corp. (25)	28,500	29	35⅞	26½	30	+1
49	37⅞	2.00	Humble Oil & Ref. (25)	8,300	44	45⅜	37⅞	38¼	−5⅞
9½	6⅝	0.50	Imperial Oil, Ltd. (No)	26,000	8⅝	8⅝	6⅝	7⅜	−1⅛
1⅝	1	....	Indian Refining (10)	6,300	1¼	1½	1	1	− ¼
10½	8⅜	1.00	International Petr. (No)	60,200	10	10	8⅜	8⅞	−1⅛
7⅞	5	....	Ohio Oil (No)	96,400	6½	7⅞	5½	6	− ⅛
26	16	1.60	Pan Amer. P & T. 'B' (50)	4,500	17	26	17	26	+8¾
6½	3⅞	....	Phillips Petr. (No)	70,500	5⅛	5¾	3⅞	4⅜	−1⅛
7⅛	4⅛	....	Prairie Oil & Gas (25)	10,400	5⅞	6½	4⅛	4⅞	− ⅛
5⅛	3¼	....	Pure Oil (25)	29,000	4½	4⅝	3¼	4¼	− ⅜
¾	½	....	Richfield Oil (No)	6,400	⅝	¾	½	½	− ¼
23	13⅜	†2.28	Royal Dutch N. Y. (13⅓)	67,300	17¼	18	13⅜	16	−1¼
9⅞	6⅛	....	Seaboard Oil (No)	60,500	8¼	9	6⅝	7¾	− ¼
4⅛	2⅝	....	Shell Union (No)	29,200	3½	3⅝	2⅝	2⅞	− ⅛
4½	2½	....	Skelly Oil (25)	5,500	3⅜	4⅛	3¼	3⅜	− ⅛
10¾	8⅜	1.00	Socony-Vacuum (25)	241,700	9½	10	8⅜	8¾	− ¾
27¼	16¾	2.00	Standard Oil of Calif (No)	137,300	25½	26½	16¾	19	−6
17¼	13⅛	1.00	Standard Oil, Ind. (25)	97,600	16	16⅜	13⅛	15⅛	− ⅞
15⅞	10	1.60	Standard Oil, Ky. (10)	31,400	13⅛	13⅝	10	11¾	−1⅛
31½	21⅝	§2.00	Standard Oil, N. J. (25)	436,600	28⅜	30½	21⅝	23⅜	−5⅛
32	24¾	1.00	Sun Oil (No)	11,600	31⅝	31⅝	24¾	28	−2½
13⅞	10	1.00	Texas Corp. (25)	140,300	11½	12⅜	10¼	11½	− ¼
3½	2	....	Tide Water Assoc. (No)	57,000	2⅜	2¾	2	2⅜	.....
13⅞	10	1.40	Union Oil of Calif. (25)	17,400	12⅜	13	10	10⅞	−1⅞
½	¼	....	Venezuelan Petr. (5)	2,800	5/16	⅜	¼	¼	− ⅛

[1] Since close of last month's table. † Paid for 1930—no regular rate. § Including extras.

1930 net profit of $12,026,424. The 1930 figure, however, included a special non-recurring profit of $28,312,000 derived from sale of interests in Sinclair Crude Oil Purchasing and Sinclair Pipe Line to Standard Oil (Indiana). It is interesting to note that bookkeeping charges last year for depreciation and depletion amounted to $26,078,876, so that on a cash basis there was a profit of $4,068,704. Financial position at the end of the period was strong. The report was made to include January of this year because the fiscal year of the new Consolidated Oil will end January 31.

CONSOLIDATED net profit of Atlantic Refining for the quarter ended March 31, 1932, was $435,000, equal to 16 cents a share on 2,696,642 shares of capital stock. The first quarter of 1931 recorded a net loss of $2,162,800.

ANOTHER company to report a profit in the first quarter was Union Oil Company of California, which showed net of $950,000, equal to 22 cents a share. But in this case a decline from the same period of the previous year was indicated, the 1931 first quarter having yielded profit of $1,800,000, or 41 cents a share. The difference in indicated trend is probably due mostly to different geographical location, since the West Coast more or less follows its own course for short periods.

IT is estimated that the consolidated report of Standard Oil Company (Indiana), which will be issued this month, will show 1931 net profit of about $17,590,000, equal to $1.04 a share on 16,911,416 shares. In 1930 net was $46,371,437, equal to $2.73 a share. Despite two reductions in the dividend rate, from $2.50 to $2 per annum in the first quarter and to $1 in the third, total dividend disbursements of about $25,300,000 exceeded net by approximately $7,800,000.

DESPITE reported first quarter net loss of $2,136,922 Phillips Petroleum was able to reduce bank loans during that period from $12,500,000 to $9,000,000. Depreciation and depletion for the quarter amounted to $5,231,992, so that on a cash basis profits were about $3,100,000. Furthermore, the report does not include earnings of Phillips Pipe Line and Phillips Natural Gas. At one time last year bank loans totaled $18,000,000.

AT their annual meeting on May 5 stockholders of Tide Water Associated Oil Company will be asked to approve reduction in the stated book value of the no par common shares from $15.68 per share to $10. This will create a capital surplus of $34,069,000, of which about $32,100,000 will be used for writing down fixed assets by the subsidiaries and the parent company. Surveys now being completed indicate that Associated Oil will charge off about $13,500,000, Tide Water Oil about $16,000,000, Tide Water Associated of California about $900,000 and Tide Water Associated (Del.), the parent company, about $1,700,000. President Byles attributes the need for such writing down of assets to new trends and changes in the oil industry in the past few years which have aversely affected heretofore sound values of properties. This action will reduce the total balance sheet assets of the company to slightly less than $200,000,000.

The report for last year showed a consolidated net loss of $5,818,671, after bookkeeping charges of $13,663,000 for depreciation and depletion and of $5,038,000 for inventory adjustment. Cash and marketable securities were shown in the balance sheet to the amount of over $14,000,000, slightly exceeding total current liabilities.

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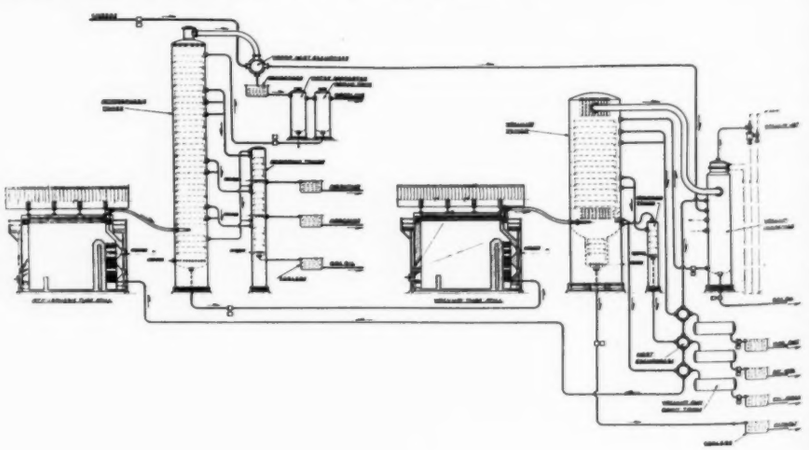
American Refinery Construction in U.S.S.R.

TWO 10,000 bbl. per day two stage atmospheric-vacuum distillation plants and five 6,000 bbl. per day single stage vacuum distillation units which are being installed by Alco Products Incorporated, New York, at Grozni and Baku respectively, are typical of the high grade refinery equipment which the U.S.S.R. formerly purchased abroad. This equipment will be placed in operation during the coming summer and will considerably augment the processing capacity of Soviet Russia's two largest petroleum refining trusts.

The accompanying diagrammatic flow chart presents a clear picture of the operation of the two stage units, which will permit continuous recovery of gasoline, naphtha, kerosene, and light gas oil at atmospheric pressure and heavy gas oil, wax distillate, intermediate wax, and overhead cylinder stock under vacuum. Consideration has been given to the production of low end point gasoline and subsequent reforming of the naphtha fraction in designing these units. To permit variation in the viscosity of the overhead cylinder stock without changing the characteristics of the pressable wax distillate, provisions have been made for taking off an intermediate wax cut in the vacuum stage.

The atmospheric tube still will operate at approximately 525 deg. Fahr., while the oil temperature will not exceed 790 deg. Fahr. at any point in the vacuum cycle. The atmospheric and vacuum top tower temperatures will be approximately 225 deg. Fahr. and 350 deg. Fahr. respectively.

At Baku the Azneft has a number of topping units operating on low cold test crudes, which contain valuable lubricating oil fractions. During the past year Alco Products Incorporated, have designed and fabricated equipment for five 6,000 bbl. per day units to handle reduced crude for the manufacture of high quality lubricating oils and specification asphalt. Inasmuch as the vacuum sections are in many instances located at a considerable distance from the topping units, the design was based on charging cold reduced crude.

The tubes in all of the vacuum tube stills are so arranged that the reduced pressure is transmitted back to the furnace, permitting the maximum amount of latent heat of vaporization to be supplied by direct fire. The base of the tower, as well as the stripping sections for bringing the various products to final specifications, have been designed for small liquid capacity and rapid cooling, in order to reduce the time at high temperature to a minimum.